CRPL-F 174 PART B FOR OFFICIAL USE

PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

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INTRODUCTION

This monthly report series is intended to keep research workers abreast of the major particulars of solar activity and the associated ionospheric, radio propagation and other geophysical effects. It is made possible through the cooperation of many observatories, laboratories and agencies as recorded in the detailed description of the tables and graphs which follows. The report is prepared in the Radio Warning Services Section, edited by Miss J.V. Lincoln and Mr. Dale B. Bucknam.

I DAILY SOLAR INDICES

Relative Sunspot Numbers -- The table includes (1) the daily American relative sunspot numbers, R_A', as compiled by the Solar Division of the American Association of Variable Star Observers, and (2) the provisional daily Zürich relative sunspot numbers, R_Z, as communicated by the Swiss Federal Observatory. Because of the time required to collect and reduce the observations, R_A' will normally appear one month later than R_Z.

The relative sunspot number is an index of the activity of the entire visible disk. It is determined each day without reference to preceding days. Each isolated cluster of sunspots is termed a sunspot group and it may consist of one or a large number of distinct spots whose size can range from 10 or more square degrees of the solar surface down to the limit of resolution (e.g. 1/8 square degrees). The relative sunspot number is defined as $R=K(10g+s)$, where g is the number of sunspot groups and s is the total number of distinct spots. The scale factor K (usually less than unity) depends on the observer and is intended to effect the conversion to the scale originated by Wolf. The observations for sunspot numbers are made by a rather small group of extraordinarily faithful observers, many of them amateurs, each with many years of experience. The counts are made visually with small, suitably protected telescopes.

Final values of R_Z appear in the IAU Quarterly Bulletin on Solar Activity, the Journal of Geophysical Research, these reports, and elsewhere. They usually differ slightly from the provisional values. The American numbers, R_A', are not revised.

Solar Flux Values, 2800 Mc -- The table also lists the daily values of solar flux at 2800 Mc recorded in watts/M^2/cycle/second bandwidth (x 10^{-22}) in two polarizations by the National Research Council at Ottawa, Canada. These solar radio noise indices are being published in accordance with CCIR Report 25 that a basic solar index for ionospheric propagation should be measured objectively and "preferably refer to a property of the sun such as radiation flux which has direct physical relationship to the ionosphere."

Graph of Sunspot Cycle -- The graph illustrates the recent trend of Cycle 19 of the 11-year sunspot cycle and some predictions of the future level of activity. The customary "12-month" smoothed index, R, is used throughout, the data being final R_Z numbers except for the current year. Predictions shown are those made for one year after the latest available datum by the method of A. G. McNish and J. V. Lincoln (Trans. Am. Geophys. Union, 30, 673-685, 1949) modified by the use of regression coefficients and mean cycle values recomputed for Cycles 8 through 18. Cycle 19 began April 1954, when the minimum $\bar{R}$ of 3.4 was reached.

II SOLAR CENTERS OF ACTIVITY

Calcium Plage and Sunspot Regions -- The table gives particulars of the centers of activity visible on the solar disk during the preceding month. These are based on estimates made and reported on the day of observation and are therefore of limited reliability.

The table gives the heliographic coordinates of each center (taken as the calcium plage unless two or more significantly and individually active sunspot groups are included in an extended plage) in terms of the Greenwich date of passage of the sun's central meridian (CMP) and the latitude; the serial number of the plage as assigned by McMath-Hulbert Observatory; the serial number of the center in the previous solar rotation, if it is a persisting region; particulars of the plage at CMP: area, central intensity; a summary of the development of the plage during the current transit of the disk, where b = born on disk, ℓ = passed to or from invisible hemisphere, d = died on disk, and / = increasing, - = stable, \ = decreasing; and age in solar rotations; particulars of the associated sunspot group, if any, at CMP: area and spot count and the summary of development during the current disk transit, similar to the above. The unit of area is a millionth of the area of a solar hemisphere; the central intensity of calcium plages is roughly estimated on a scale of 1 = faint to 5 = very bright.

Calcium plage data are available through the cooperation of the McMath-Hulbert Observatory of the University of Michigan. The sunspot data are compiled from reports from the U. S. Naval Observatory, and from reports from Europe and Japan received through the daily Ursigram messages.

Coronal Line Emission Indices -- In the table are summarized solar coronal emission intensity indices for the green (Fe XIV at λ5303) and red (Fe X at λ6374) coronal lines. The indices are based on measurements made at 5° intervals around the periphery of the solar disk by the High Altitude Observatory at Climax, Colorado, and by Harvard University observers at Sacramento Peak (The USAF Upper Air Research Observatory at Sunspot, New Mexico, under contract AF 19(604)-146). The measurements are expressed as the number of millionths of

an Angstrom of the continuum of the center of the solar disk (at the same wavelength as the line) that would contain the same energy as the observed coronal line. The indices have the following meanings:

G_6 = mean of six highest line intensities in quadrant for $\lambda 5303$.

R_6 = same for $\lambda 6374$.

G_1 = highest value of intensity in quadrant, for $\lambda 5303$.

R_1 = same for $\lambda 6374$.

The dates given in the table correspond to the approximate time of CMP of the longitude zone represented by the indices. The actual observations were made for the North East and South East quadrants 7 days before; for the South West and North West quadrants 7 days after the CMP date given.

To obtain rough measures of the integrated emission of the entire solar disk in either of the lines, assuming the coronal changes to be small in a half solar rotation, it is satisfactory to perform the following type of summation given in example for 15 October:

$$\left(\begin{matrix}\text{MEAN DISK EMISSION}\\ \text{IN } \lambda 5303\end{matrix}\right)_{15\text{ OCT}} = \frac{1}{N}\left[\sum_{15\text{ OCT}}^{22\text{ OCT}}\left\{(G_6)_{NE}+(G_6)_{SE}\right\}+\sum_{8\text{ OCT}}^{14\text{ OCT}}\left\{(G_6)_{SW}+(G_6)_{NW}\right\}\right]$$

where N is the number of indices entering the summation.

Such integrated disk indices as well as integrated whole-sun indices are computed for each day and are published quarterly in the "Solar Activity Summary" issued by the High Altitude Observatory at Boulder, Colorado. In the same reports are given maps of the intensity distribution of coronal emission derived from all available Climax and Sacramento Peak observations, as well as other information on solar activity, such as maps made from daily limb prominence surveys in Hα and notes regarding the history of active regions on the solar disk.

Preliminary summaries of solar activity, prepared on a fast schedule, are issued Friday of each week from High Altitude Observatory in conjunction with CRPL and include solar activity through the preceding day. These are useful to groups needing information on the current status of activity on the visible solar disk, but are not recommended for research uses unless such a prompt schedule of reporting is essential. The same information is included in the subsequent quarterly reports, with extensive additions, corrections and evaluations.

III SOLAR FLARES

Optical Observations -- The table presents the preliminary record of solar flares as reported to the CRPL on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete data are published later in the Quarterly Bulletin on Solar Activity, I.A.U., in various observatory publications and elsewhere. The present listing serves to identify and roughly describe the phenomena observed.

Reporting directly to the CRPL are the following observatories: McMath-Hulbert, Wendelstein, Sacramento Peak, Mitaka and Swedish Astrophysical Station on Capri. The remainder report through the URSIgram centers or are available through the IGY World Data Center for Solar Activity in Boulder. Observations are in the light of the center of the H-alpha line unless noted otherwise. The reports from Sacramento Peak, New Mexico (communicated to CRPL by the High Altitude Observatory at Boulder) are from observations at the USAF Upper Air Research Observatory at Sunspot, New Mexico, by Harvard University observers, under contract AF 19(604)-146.

For each flare are listed the reporting observatory, the date, beginning and ending times, time of maximum phase, the heliographic coordinates in degrees, McMath serial number of the region, duration, the flare importance on the IAU scale of 1- to 3+, observing conditions where 1 means poor, 2 fair and 3 good, time of measurement for tabulated width of Hα or tabulated area, measured (i.e. projected) maximum area in square degrees, corrected maximum area in square degrees which equals measured area times secant h where h is the heliocentric angle, maximum effective line-width in Hα expressed in Angstroms, and maximum intensity of Hα expressed in per cent of the continuous spectrum. The following symbols are used in the table:

D = Greater than   F = Approximately
E = Less than   & = Plus

A final column lists provisionally the occurrence of simultaneous ionospheric effects as observed on selected field-strength recordings of distant high-frequency radio transmissions; a more nearly definitive list of these ionospheric effects, including particulars, appears in these reports after the lapse of a month (see below). All times are Universal Time (UT or GCT). Subflares (importance 1-) are listed by date, time of beginning and their heliographic coordinates. A graph presents intervals for which there were no patrols for flare observations from the observatories whose complete data are published in the table.

Ionospheric Effects -- SID, sudden ionospheric disturbances (and GID--gradual ionospheric disturbances) may be detected in a number of ways: short wave fadeouts (SWF), enhancement of low frequency atmospherics (SEA), increases in cosmic absorption (SCNA), and so forth.

A table lists SWF events that have been recognized on field-strength recordings of distant high-frequency radio transmissions. Under a coordinated program, the staffs at the following ionospheric sounding stations contribute reports that are screened and synthesized at CRPL-Boulder: Puerto Rico, Ft. Belvoir, Va., and Anchorage, Alaska (CRPL Stations: PR, BE, AN); Huancayo, Peru (CRPL-Associated Laboratory: HU); and Ft. Monmouth, N.J., White Sands, N. Mex., Adak, Alaska, and Okinawa (U.S. Signal Corps Stations: FM, WS, AD, OK). McMath-Hulbert Observatory (MC) also contributes such reports. In addition, reports are volunteered by RCA Communications Inc., Marconi Wireless, Netherlands Postal and Telecommunications Services, Swedish Telecommunications, and others; these usually specify times of SWF and the radio paths involved. Through the URSIgrams, reports are available from still other stations as given monthly in the footnotes.

In the coordinated program, the abnormal fades of field strength not obviously ascribable to other causes, are described as short wave fadeouts with the following further classification:

S-SWF: sudden drop-out and gradual recovery
Slow S-SWF: drop-out taking 5 to 15 minutes and gradual recovery
G-SWF: gradual disturbance; fade irregular in either drop-out or recovery or both.

When there is agreement among the various reporting stations on the time (UT) of an event, it is accepted as a widespread phenomenon and listed in the table.

The degree of confidence in identifying the event, a subjective estimate, is reported by the stations and this is summarized in an index of certainty that the event is widespread, ranging from 1 (possible) to 5 (definite). The times given in the table for the event are from the report of a station (underlined in table) that identified it with high confidence. The criteria for the subjective importance rating assigned by each station on a scale of 1- to 3+ include amplitude of the fade, duration and confidence; greater consideration is given to reports on paths near the subsolar point in arriving at the summary importance rating given in the table.
Note: The tables of SID observed at Washington included in CRPL F-reports prior to F-135 were restricted to events classed here as S-SWF.

A second table lists sudden ionospheric disturbances which have been recognized on recorders for detecting cosmic absorption at about 18 Mc (SCNA) or on recorders for detecting enhancements of low frequency atmospherics at about 27 kc (SEA) together with solar radio bursts at 18 Mc as identified on the SCNA records.

Reports are received either directly or through the IGY World Data Center for Solar Activity at the High Altitude Observatory, Boulder, Colo. The following observatories report SCNA: Rensselaer Polytechnic Institute Observatory, Grafton, N.Y. (RE); McMath-Hulbert

Observatory (MC); Sacramento Peak, N.Mex. (SP); High Altitude Observatory, Boulder, Colo. (BO); and the Royal Observatory Edinburgh (ED). All of these except the Royal Observatory Edinburgh also report solar noise bursts observed at 18 Mc. The SEA reports come from the following: Department of Terrestrial Magnetism, Carnegie Institution of Washington, Station at Derwood, Md. (DE); Dunsink Observatory, Ireland (DU); Royal Observatory Edinburgh (ED); three stations operated by the Netherlands PTT at Hollandia, Dutch West Indies (HO), Nederhorst den Berg, Netherland (NE), and Paramaribo, New Guinea (PA); Panska Ves Observatory near Prague, Czech. (PU); High Altitude Observatory, Boulder, Colo. (BO); Sacramento Peak, N.Mex. (SP); McMath-Hulbert Observatory (MC); Neustrelitz (NU); Kuhlungsborn (KU); and a group of American Association of Variable Star Observers located at Brooklyn, N.Y. (A1), Pittsburgh, Pa. (A2), Paterson, N.J. (A3), Powell, Ohio (A4), Ramsey, N.J. (A5), Oshkosh, Wis. (A6), China Lake, Calif. (A7) and Manhattan, Kansas (A8).

These reports are coordinated at CRPL-Boulder. When there is agreement among the various reporting stations on the time (UT) of an event, it is accepted as a widespread phenomenon and listed in the table. Some phenomena are listed, if noted at only one location, if there has been a flare or another type of flare-associated effect reported for that time.

In the table under the type of event the importance of the event is given on a scale of 1 minus to 3 plus. Next there is the index of widespread certainty ranging from 1 (possible) to 5 (definite). The time of beginning, maximum and end of the event in UT is given as reported by the station underlined in the group of observing stations. If the event is an SCNA, a percent absorption figure is given. This absorption is calculated by

$$\text{SCNA}\ \% = \frac{I_n - I_f}{I_n} \quad \times\ 100$$

where I_n = noise diode current required to give a recorder deflection equal to that which would have occurred in the absence of a flare, i.e. a value extrapolated from cosmic noise level trend before and after a flare. The previous day's record may be considered if necessary.

and I_f = noise diode current required to give a recorder deflection equal to the level at the time of maximum absorption.

IV SOLAR RADIO WAVES

<u>9530 Mc and 3200 Mc Observations</u>

Data on solar radio emission made at the Naval Research Laboratory, Washington, D.C., by the Radio Astronomy Branch of the Atmosphere

and Astrophysics Division on 9530 Mc (3.15 cm) and 3200 Mc (9.4 cm) are presented. Data received by 4-ft. and 6-ft. parabolic antennas installed on a common tracking mount--4-ft. for 3.15 cm and 6-ft. for 9.4 cm. Daily values of the solar flux are listed as recorded in watts/M^2/cycle/second bandwidth (X 10^{-22}) in two polarizations. Outstanding occurrences are measured from above the daily flux level and are given in a separate table in terms of the types developed by A. E. Covington for his recordings at 2800 Mc. In the section headed 2800 Mc Observations these types are described. The column headed IAU designates the bursts according to the International Astronomical Union scheme. These are described as system (2) in the section headed 170 Mc Observations.

2800 Mc Observations

The data on solar radio wave events made in Ottawa, Canada by the Radio and Electrical Engineering Division of the National Research Council (A.E. Covington) at 2800 Mc (10-cm emission) are presented. Near local noon (about 1700 UT) the sensitivity of the radiometer is determined and a mean flux for the whole day calculated. These values are given in a tabular form (see table I-1) in units of 10^{-22} watts/M^2/c/s. Burst phenomena are measured above this level and are given in terms especially suitable for the variations observed on this frequency. The basis for the classifications is described by Covington - J.R. Astro. Soc. Can. 45, 49, 1951 and Dodson, Hedeman and Covington, Ap. J. 119, 541, 1954. A modification in terminology with a view to simplification has been introduced and consists essentially of the omission of the descriptive word "Single" from the "Single-Simple" and "Single-Complex" classes; in designating the "Single", "Single-Simple" and "Rise and Fall" bursts into a single classification designated as "Simple Bursts" with an appropriate type number; in the addition of the letter "f" to indicate that the burst deviates from the basic pattern by the presence of one or more small fluctuations in intensity; and by the addition of the letter "A" to indicate that the event has another smaller duration event superimposed upon it.

Simple Burst

Any single burst which rises to one maximum and then decreases to the pre-burst level.

1 - Simple 1 -- Simple burst, type 1 (formerly "single"). Bursts of intensity less than 7 1/2 flux units and duration less than 7 1/2 minutes.

2 - Simple 2 -- Simple burst, type 2 (formerly "single-simple"). Bursts of impulsive nature with intensity greater than 7 1/2 flux units.

3 - Simple 3 -- Simple burst, type 3 (formerly "rise and fall"). Bursts of moderate intensity with duration greater than 7 1/2 minutes.

4 - Post-burst increase -- Postburst level is greater than the preburst level. The gradual return to normal flux may require as long as several hours.

5 - Absorption following burst (negative post).

6 - Complex -- (formerly "single-complex"). A single burst which shows two or more comparable maxima before the activity has declined to zero.

7 - Period of irregular activity or fluctuations -- Series of overlapping bursts of moderate intensity and duration.

8 - Group -- Series of single isolated bursts occurring in succession with intensity between the events equal to the level before and after the group.

9 - Precursor -- A small increase of intensity occurring before a larger increase.

Great Burst

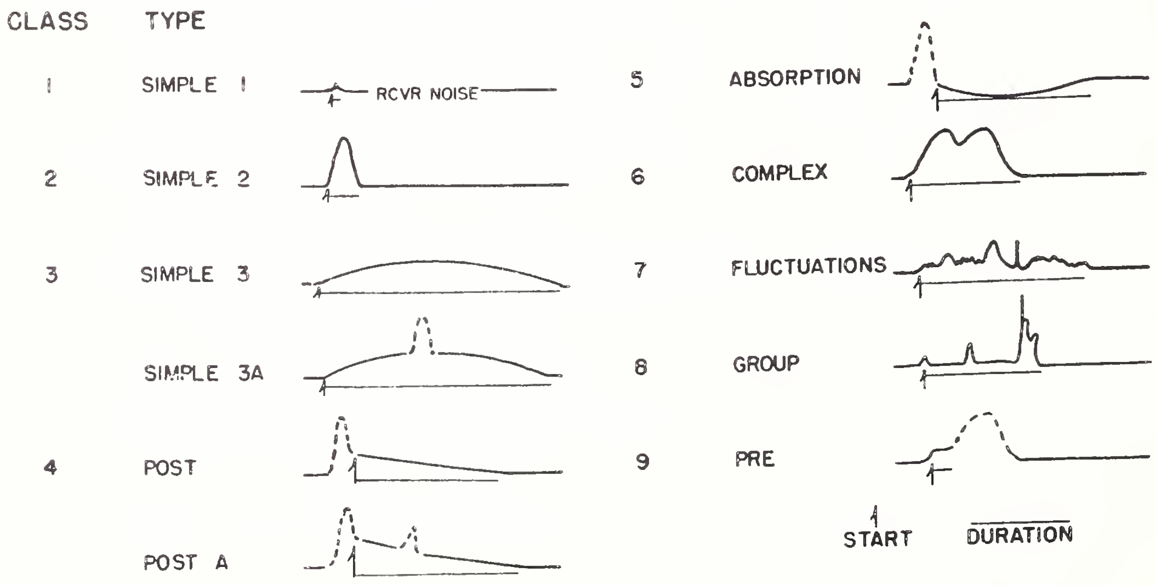
Infrequently occurring bursts of great intensity, often of complicated structure.

Letter "A"

Indicates that this event has another event superimposed upon it.

Letter "f"

Indicates that the basic form of the event is modified by secondary fluctuations.



170 Mc Observations

Data on solar radio emission at the nominal frequency of 170 Mc recorded at the Gunbarrel Hill (Boulder) station of the National Bureau of Standards (R.S. Lawrence) are presented. The half width of the antenna lobe is appreciably greater than the solar disk. Polarization is not determined, but the dipole is oriented E-W. All times are in Universal Time (UT or GCT).

3-Hourly and Daily Flux Density and Variability -- Flux density is given in power units. These units are approximately 10^{-22} watts meter^{-2}(c/s)$^{-1}$ for both polarizations together. They will be subject to a correction factor when gain measurements of the antenna have been made. The median flux is measured for every one-hour period having at least thirty minutes of usable record and an applicable gain calibration. A three-hour value of flux is obtained by averaging the available one-hour medians (at least two required). A daily value of flux is obtained by averaging all available one-hour medians (at least four required). A dash indicates that insufficient measurements were made to meet the above requirements or that the records were not of usable quality. Flux values may be followed by the qualifying symbols D, S, and X defined subsequently.

The variability index, given for each three-hour interval, is on a scale 0 to 3 defined as follows:

0 - The instantaneous flux did not drop below one-half the median level or exceed twice the median level at any time.

1 - The instantaneous flux made from one to ten excursions outside the range described above.

2 - The instantaneous flux made from ten to one hundred excursions outside the range described above.

3 - The instantaneous flux made more than one hundred excursions outside the range described above.

For the purpose of the variability index, an excursion whose maximum intensity is M times the median level is counted as M excursions. The variability index is omitted if measurements were made for less than one hour during the period. The variability for the day is the mean of the three-hourly values. The letter S follows variability indices which are in doubt because of atmospherics or local interference.

The observing periods are given in U.T. to the nearest 1/10 hour and they usually extend into the next Greenwich day.

Outstanding Occurrences -- A separate table lists the occurrences which are not adequately described by the three-hourly values of flux

density and variability. Two classifications are given: (1) A system in general accord with that described and illustrated by Dodson, Hedeman, and Owren (Ap. J. 118, 169, 1953) and (2) the system described in the IGY Solar Activity Instruction Manual, prepared by the Radio Emission editor of the I.A.U. Quarterly Bulletin on Solar Activity.

In system (1) the occurrences are identified by numbers which do not necessarily indicate the magnitude of the event, as follows:

0 - Rise in base level -- A temporary increase in the continuum with duration of the order of tens of minutes to an hour.

1 - Series of bursts -- Bursts or groups of bursts, occurring intermittently over an interval of time of the order of minutes or hours. Such series of bursts are assigned as distinctive events only when they occur on a smooth record or show as a distinct change in the activity.

2 - Groups of bursts -- A cluster of bursts occurring in an interval of time of the order of minutes.

3 - Minor burst -- A burst of moderate or small amplitude, and duration of the order of one or two minutes.

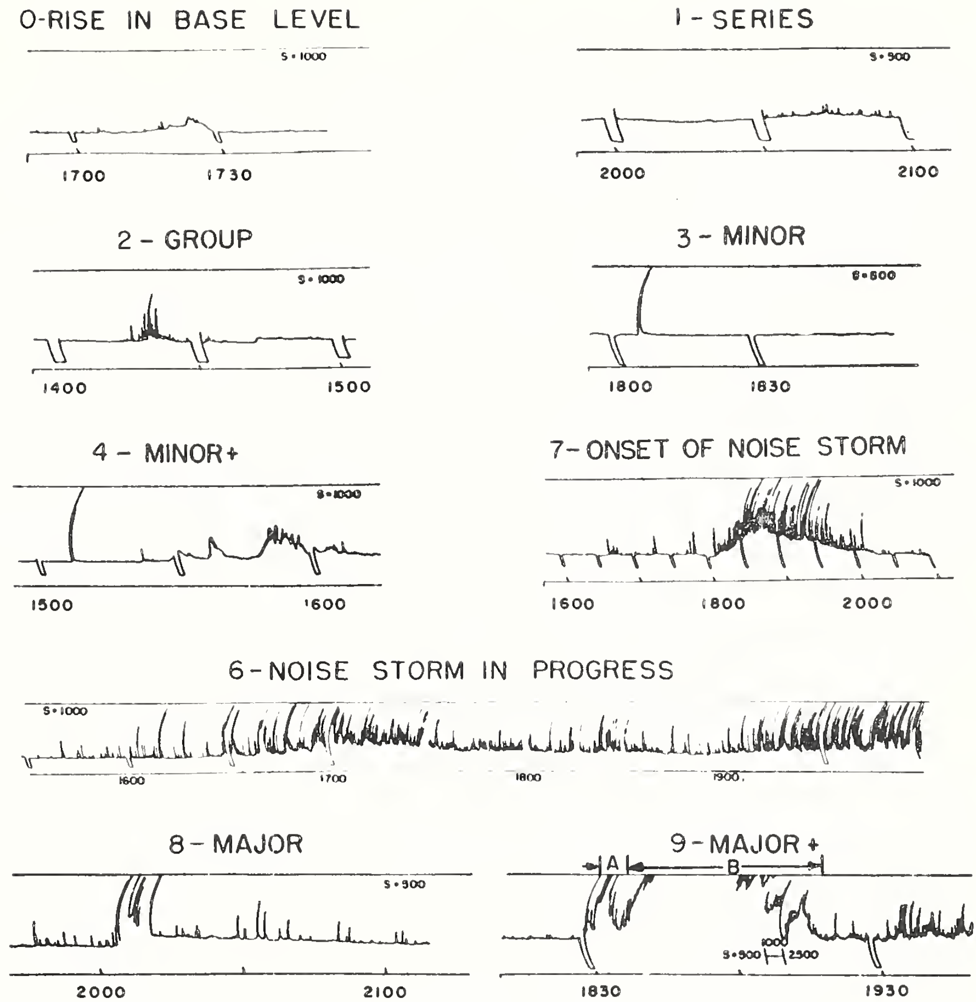
4 - Minor burst and second part -- A double rise in flux in which the early rise is a minor burst.

6 - Noise storm -- A temporary increase in radiation characterized by numerous closely spaced bursts, by an increase in the continuum, or by both. Duration is of the order of hours or days.

7 - Noise storm begins -- The onset of a noise storm occurs at some time during the observing period.

8 - Major burst - An outburst, or other burst of large amplitude and more than average duration. A major burst is usually complex, with a duration of the order of one to ten minutes.

9A, 9B, or 9 -- Major burst and second part or large event without distinct first and second parts -- If there is a double rise in flux, the first part, a major burst, is listed as 9A and the second part as 9B. The second part may consist of a rise in base level, a group or series of bursts, a noise storm. A major increase in flux with duration greater than ten minutes but without distinct first and second parts, is listed simply as 9.



In system (2) combinations of the following letters are used to describe some distinctive characteristics of the recorded disturbances:

S = simple rise and fall of intensity,
C = complex variation of intensity,
A = appears to be part of general activity,
D = distinct from (i.e. apparently superimposed upon) the general background,
M = multiple peaks separated by relatively long periods of quietness,
F = multiple peaks separated by relatively short periods of quietness,
E = sudden commencement or rise of activity.

Starting and maximum times are read to the nearest 1/10 minute if they are very definite and otherwise to the nearest minute. If

the duration is less than five minutes, it is given to the nearest 1/10 minute; otherwise to the nearest minute (see also qualifying symbols below).

Maximum flux densities are given in units of 10^{-22} watts meter^{-2}(c/s)$^{-1}$. The instantaneous maximum flux density is the highest peak in the disturbance measured above the sky level. The smoothed maximum flux density is the maximum value of a smooth curve drawn through the outstanding occurrence with a smoothing period of 20 to 50 percent of the total duration; it is measured above the estimated level in the absence of the disturbance. The intention is that (smoothed maximum) x (duration) should give a measure of the energy radiated in the disturbance.

A dash indicates missing or insignificant data. Observations are interrupted during the period from 26 to 29 minutes after each hour for calibrations. Observing periods are given in the Daily Data tables. The following qualifying symbols are used:

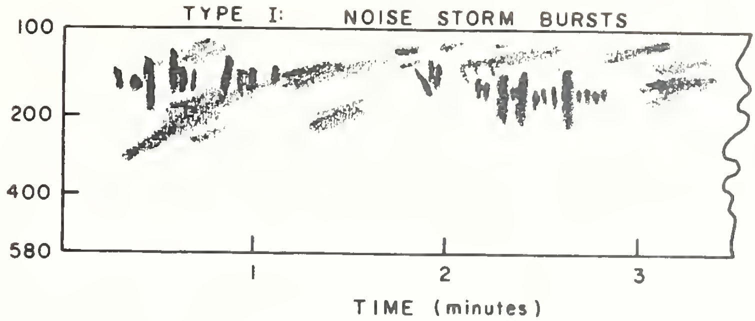
- B - Event in progress before observations began.
- D - Greater than.
- I - Event apparently continued during an interruption of the observations. The period of the interruption may be given in the remarks.
- N - See footnotes.
- X - Measurement is uncertain or doubtful.
- S - Measurement may be influenced by interference or atmospherics.

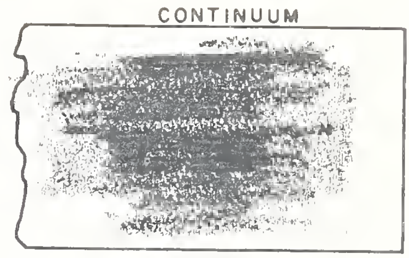
Spectrum Observations

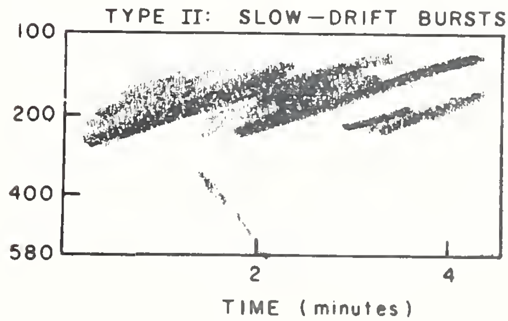
Data on solar radio emission in the spectral range 100-580 Mc recorded at the Harvard University Radio Astronomy Station, Fort Davis, Texas (A. Maxwell) are presented. The research is sponsored by the Geophysics Research Directorate of the Air Force Cambridge Research Center, Air Research and Development Command, under contract AF19(604)-1394.

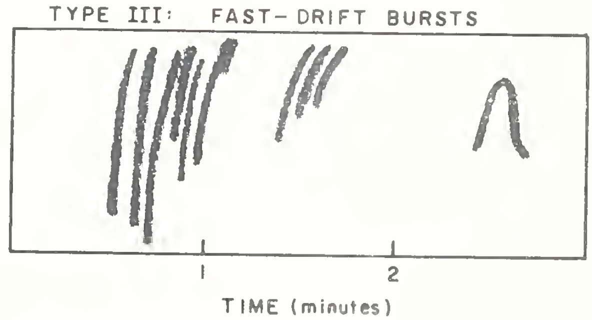
The receiving equipment consists of three separate sweep-frequency receivers covering the bands 100-180, 170-320, 300-580 Mc. These are attached to separate broad-band feeds mounted coaxially at the primary focus of an 8.55 meter diameter paraboloid, the 160-320 Mc feed being cross-polarized with the other two feeds. The effective collecting area of the antenna is 40 sq. meters at 100 Mc and 45 sq. meters at 500 Mc.

The four types of recognized spectral activity are idealized below:









Type IV continuum radiation is a steady enhancement of the background level over a wide band of the spectrum. In one form is is frequently associated with noise storms. A second form is characterized by the following properties:

(1) It is uniformly distributed over a band of frequencies often as wide as 300 Mc. The whole band may drift systematically toward higher or lower frequencies.
(2) Its intensity is essentially non-fluctuating.
(3) It is usually of high intensity, i.e., greater than 10^{-20} watts meter^{-2}(c/s)$^{-1}$.
(4) It often occurs at frequencies higher than the spectral range of noise storms, the upper limit of which rarely exceeds 250 Mc.
(5) After great radio outbursts it may last for as long as 5 hours. At the other extreme, a miniscule version, occurring after a group of fast drift bursts or an inverted U burst, may last only 10-60 seconds.

The large scale examples of this continuum are listed as "Cont. IV" in the tables. It probably corresponds to the "Type IV" radiation described by Boischot (Comptes Rendus 244, 1326, 1957) from fixed frequency observations taken at 169 Mc at Meudon, France. Photographic examples are published by Maxwell, Swarup and Thompson (Proc. IRE 46, 142, 1958). A few remaining solar radio bursts are tabulated as unclassified.

The symbols used in the tables are:

b = single burst
g = small group (<10) of bursts
G = large group (>10) of bursts
= Arrows indicate continuity of solar activity between two Greenwich days.

The minimum detectable level of solar activity is a function of frequency: approximately 5×10^{-22} watts meter^{-2}(c/s)$^{-1}$ at 100 Mc and 10^{-21} watts meter^{-2}(c/s)$^{-1}$ at 500 Mc. The equipment records signals over an intensity range of approximately 1000:1. There are three classes of intensity given in the tables. For 100 Mc they are:

1 = faint, 5 to 30×10^{-22} watts meter^{-2}(c/s)$^{-1}$
2 = moderate, 30 to 100×10^{-22}
3 = strong, $>100 \times 10^{-22}$.

The times are Universal Time (UT). The accuracy is to the nearest half minute, except in the case of major outbursts which are specified to the nearest 0.1 minute.

<u>169 Mc Interferometric Observations</u>

The 169 Mc interferometric observations are recorded around local noon at Nançay (Cher), France, (N47°23', E8^{m}47^{s}) the field station of the Meudon Observatory.

The main lobes are parallel to the meridian plane: the half-power width is 3.8 minutes in the East-West direction and much larger than the solar diameter in the North-South direction. The main lobes are about 2° apart (Ann. Astrophys. <u>20</u>, 155, 1957). The records give the strip intensity distribution from the center of the disk to 30' to the West and East.

These daily distributions are plotted on the same chart giving diagrams of evolution (C.R. <u>244</u>, 1460, 1957). Points of intensity 0.5 - 0.75 - 1.0 - 1.5 and 2.0 times 10^{-22} watts/m^2/c/s are joined day after day in the form of isophotes. Black dots give the position of the center of the radio spots for each day; a line indicates the width of the recorded lobe pattern when it can be measured with certainty. For each radio spot the smoothed intensity around noon is given in 10^{-22} watts/m^2/c/s.

Note that the isophotes cannot be measured when a radio spot of large intensity is on the disk.

V GEOMAGNETIC ACTIVITY INDICES

C, Kp, Ap, and Selected Quiet and Disturbed Days -- The data in the table are: (1) preliminary international character figures, C; (2) geomagnetic planetary three-hour range indices, Kp; (3) daily "equivalent amplitude," Ap; (4) magnetically selected quiet and disturbed days.

This table is made available by the Committee on Characterization of Magnetic Disturbances of IAGA, IUGG. The Meteorological Office, De Bilt, Holland collects the data from magnetic observatories distributed throughout the world, and compiles C and selected days. The Chairman of the Committee computes the planetary and equivalent amplitude indices. The same data are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

The C-figure is the arithmetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm).

Kp is the mean standardized K-index from 12 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 (very quiet) to 9 (extremely disturbed), expressed in thirds of a unit, e.g. 5- is 4 2/3, 5o is 5 0/3, and 5+ is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948" of the Association of Terrestrial Magnetism and Electricity (IATME), International Union of Geodesy and Geophysics.

Ap is a daily index of magnetic activity on a linear scale rather than on the quasi-logarithmic scale of the K-indices. It is the average of the eight values of an intermediate 3-hourly index "ap," defined as one-half the average gamma range of the most disturbed of the three force components, in the three-hour interval at standard stations; in practice, ap is computed from the Kp for the 3-hour interval. The extreme range of the scale of Ap is 0 to 400. The method is described in IATME Bulletin No. 12h (for 1953) p. viii f. Values of Ap (like Kp and Cp) have been published for the Polar Year 1932/33 and for the years 1937 onwards.

The magnetically quiet and disturbed days are selected in accordance with the general outline in Terr. Mag. (predecessor to J. Geophys. Res.) 48, pp 219-227, December 1943. The method in current use calls for ranking the days of a month by their geomagnetic activity as determined from the following three criteria with equal weight: (1) the sum of the eight Kp's; (2) the sum of the squares of the eight Kp's; and (3) the greatest Kp.

<u>Chart of Kp by Solar Rotations</u> -- The graph of Kp by solar rotations is furnished through the courtesy of Dr. J. Bartels, Geophysikalisches Institute, Göttingen.

VI RADIO PROPAGATION QUALITY INDICES

One can take as the definition of a radio propagation quality index: the measure of the efficiency of a medium-powered radio circuit operated under ideal conditions in all respects, except for the variable effect of the ionosphere on the propagation of the transmittal signal. The indices given here are derived from monitoring and circuit performance reports, and are the nearest practical approximation to the ideal index of propagation quality.

Quality indices are usually expressed on a scale that ranges from one to nine. Indices of four or less are generally taken to represent significant disturbance. (Note that for geomagnetic K-indices, disturbance is represented by higher numbers.) The adjectival equivalents of the integral quality indices are as follows:

1 = useless	4 = poor-to-fair	7 = good
2 = very poor	5 = fair	8 = very good
3 = poor	6 = fair-to-good	9 = excellent

CRPL forecasts are expressed on the same scale. The tables summarizing the outcome of forecasts include categories P-Perfect; S-Satisfactory; U-Unsatisfactory; F-Failure. The following conventions apply:

P - forecast quality equal to observed

U - forecast quality two or more grades different from observed when <u>both</u> forecast and observed were > 5, or both < 5

S - forecast quality one grade different from observed

F - other times when forecast quality two or more grades different from observed

Full discussion of the reliability of forecasts requires consideration of many factors besides the over-simplified summary given.

The quality figures represent a consensus of experience with radio propagation conditions. Since they are based entirely on monitoring or traffic reports, the reasons for low quality are not necessarily known and may not be limited to ionospheric storminess. For instance, low quality may result from improper frequency usage for the path and time of day. Although, wherever it is reported, frequency usage is included in the rating of reports, it must often be an assumption that the reports refer to optimum working frequencies. It is more difficult to eliminate from the indices conditions of low quality for reasons such as multipath or interference. These considerations should be taken

into account in interpreting research correlations between the Q-figures and solar, auroral, geomagnetic or similar indices.

North Atlantic Radio Path -- The CRPL quality figures, Qa, are compiled by the North Atlantic Radio Warning Service (NARWS), the CRPL forecasting center at Ft. Belvoir, Virginia, from radio traffic data for North Atlantic transmission paths closely approximating New York-to-London. These are reported to CRPL by the Canadian Defense Research Board, Canadian Broadcasting Corporation, and the following agencies of the U.S. Government:--Coast Guard, Navy, Army Signal Corps, U.S. Information Agency. Supplementing these data are CRPL monitoring, direction-finding observations and field-strength measurements of North Atlantic transmissions made at Belvoir.

The original reports are submitted on various scales and for various time intervals. The observations for each 6-hour interval are averaged on the original scale. These 6-hour indices are then adjusted to the 1 to 9 quality-figure scale by a conversion table prepared by comparing the distribution of these indices for at least four months, usually a year, with a master distribution determined from analysis of the reports originally made on the 1 to 9 quality-figure scale. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. The 6-hourly quality figure is the mean of the reports available for that period.

The 6-hourly quality figures are given in this table to the nearest one-third of a unit, e.g. 5o is 5 and 0/3; 5- is 4 and 2/3; 5+ is 5 and 1/3. Other data included are:

(a) Whole-day radio quality indices, which are weighted averages of the four 6-hourly indices, with half weight given to quality grades 5 and 6. This procedure tends to give whole-day indices suitable for comparison with whole-day advance forecasts which seek to designate the days of significant disturbance or unusually quiet conditions.

(b) Short-term forecasts, issued every six hours by the North Atlantic Radio Warning Service. These are issued one hour before 00^h, 06^h, 12^h, 18^h, UT and are applicable to the period 1 to 7 hours ahead.

(c) Advance forecasts (CRPL-J) are issued once a week and are applicable 1 to 7 days ahead. They are modified as necessary by the Special Disturbance Warning (CRPL-SDW) applicable 1 to 3 days ahead, which may be followed by a supplementary forecast (CRPL-Js) applicable to days remaining until next CRPL-J forecast. The forecast entitled "final" consists of the most recent of the above forms and is scored against the whole-day quality index.

(d) Half-day averages of the geomagnetic K indices measured by the Fredericksburg Magnetic Observatory of the U.S. Coast and Geodetic Survey.

A chart compares the short-term forecasts with Qa-figures. A second chart compares the outcome of the final advance forecasts with a type of "blind" forecast. For the latter, the frequency for each quality grade, as determined from the distribution of quality grades in the four most recent months of the current season, is partitioned among the grades observed in the current month in proportion to the frequencies observed in the current month.

Ranges of useful frequencies on the North Atlantic radio path are shown in a series of diagrams, one for each day. The shaded area indicates the range of frequencies for which transmissions of quality 5 or greater were observed. The blacker the diagram, the quieter the day has been; a narrow strip indicates either high LUHF, low MUF, or both. These diagrams are based on data reported to CRPL by the German Post Office through the Fermeldetechnischen Zentralamtes, Darmstadt, Germany, being observations every one and a half hours of selected transmitters located in the eastern portion of North America. Since January 6, 1958 the transmitters monitored are restricted to those located north of 39° latitude. The magnetic activity index, A_{Fr}, from Fredericksburg, Va., is also given for each day.

Note: Beginning with data for September 1955, Qa has been determined from reports that are available within a few hours or at most within a few days, including for the first time, the CRPL observations. Therefore these are the indices by which the forecasters assess every day the conditions in the recent past. Over a period of several years, they have closely paralleled the former Qa indices which excluded CRPL observations and included three additional reports received after a considerable lag. Qa was first published to the nearest one-third of a unit at the same time.

North Pacific Radio Path -- The CRPL quality figures, Qp, are compiled by the North Pacific Radio Warning Service (NPRWS), the CRPL forecasting center at Anchorage, Alaska, from radio traffic data for moderately long transmission paths in the North Pacific equivalent to Seattle-to-Anchorage or Anchorage-to-Tokyo. These include reports to CRPL by the Alaska Communications System, Aeronautical Radio, Inc., U.S. Air Force and Civil Aeronautical Administration. In addition, there are CRPL monitoring, direction finder observations and field strength measurements of suitable transmissions.

The original reports are on various scales and for various time intervals. The observations for each 8 hours or 24 hour period are averaged on the original scale. This average is compared with reports for the same period in the preceding two months and expressed as a deviation from the 3-month mean. The deviations are put on the 1 to 9 scale of quality which is assumed to have a standard deviation of 1.25 and a mean for the various periods as follows:

03-10 hours UT	5.33	19-02 hours UT	6.00
11-18	5.33	00-24	5.67

The 8-hour and 24-hour indices Qp are determined separately. Each index is a weighted mean where the CRPL observations have unit weight and the others are weighted by the correlation coefficient with the CRPL observations.

The table, analagous to that for Qa, includes the 8-hourly quality figures; whole day quality figures; short-term forecasts issued by NPRWS three times daily at 02^h, 10^h, and 18^h UT, applicable to the stated 8-hour periods; advance forecasts issued weekly by NPRWS (CRPL-Jp report) modified as necessary by Special Disturbance Warnings (CRPL-SDW) and supplementary forecasts (CRPL-Jps); and half-day averages of geomagnetic K indices from Sitka.

The chart compares the outcome of the final advance forecasts, on the same basis as the similar chart for the North Atlantic Radio Path.

Note: Beginning with November 1956 the short-term forecast formerly made at 0900 UT was changed to 1000 UT. The North Pacific quality figures used for evaluation are now 8-hourly rather than 9-hourly.

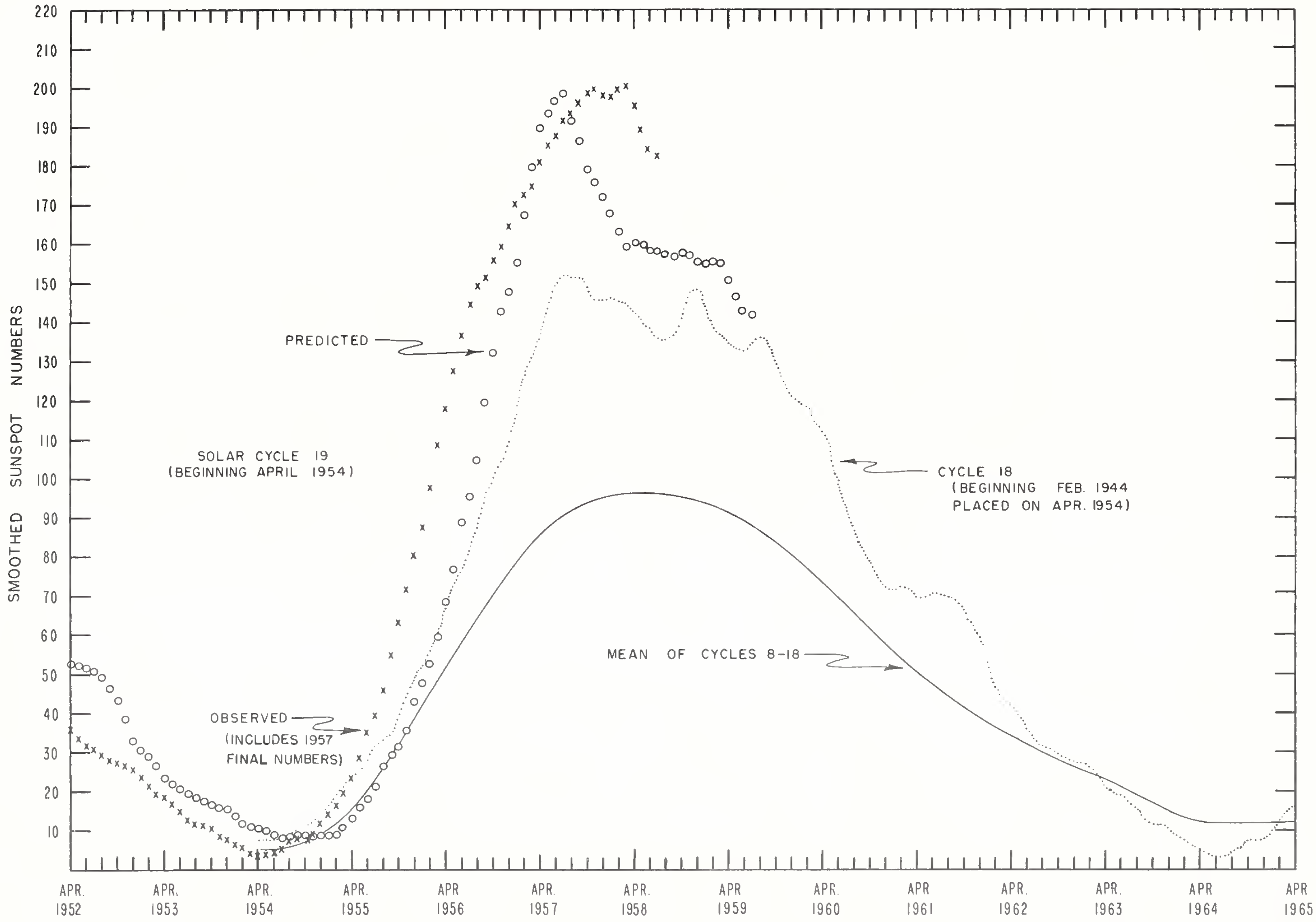
VII ALERT PERIODS AND SPECIAL WORLD INTERVALS

A table gives the Alert Periods and Special World Intervals (SWI) as designated by the IGY World Warning Agency at Ft. Belvoir, Va. For each day of the Alert or SWI are given the number of flares of importance two or greater reported promptly to the IGY World Warning Agency and the magnetic activity index A_{Be} observed at the IGY World Warning Agency.

DAILY SOLAR INDICES

Dec. 1958	American Relative Sunspot Numbers R_A'
1	255
2	225
3	191
4	225
5	226
6	226
7	207
8	236
9	263
10	203
11	215
12	170
13	220
14	186
15	116
16	135
17	116
18	96
19	71
20	86
21	94
22	107
23	102
24	153
25	173
26	204
27	186
28	191
29	143
30	142
31	173
Mean:	172.5

Jan. 1959	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	201	235
2	201	250
3	207	266
4	217	270
5	243	282
6	228	-
7	233	306
8	241	278
9	245	268
10	224	282
11	218	260
12	203	251
13	192	235
14	120	224
15	120	207
16	143	213
17	168	220
18	177	237
19	202	265
20	240	294
21	248	315
22	268	337
23	255	328
24	254	334
25	250	321
26	240	314
27	253	322
28	232	304
29	203	262
30	157	224
31	136	214
Mean:	210.3	270.6



PREDICTED AND OBSERVED SUNSPOT NUMBERS

COMMERCE - STANDARDS - BOULDER

CALCIUM PLAGE AND SUNSPOT REGIONS

JANUARY 1959

CMP Jan. 1959	Lat	McMath Plage Number	Return of Region	Calcium Plage Data: CMP Values Area	Int.	History	Age	Sunspot Data: CMP Values Area	Count	History
00.5	S29	4948	New	(700)	(3.5)	b /‾ ℓ	1			
01.3	S04	4940	4905	3100	2.5	ℓ — ℓ	2	180	1	ℓ — ℓ
01.6	S18	4942	*	1400	2	ℓ \ d	2,4			
03.6	N20	4943	New	2700	3.5	ℓ — ℓ	1	70	3	ℓ — ℓ
03.7	N04	4954	New	(400)	(2)	b / ℓ	1	(270)	(7)	b / ℓ
03.8	S17	4944	*	4800	3.5	ℓ — ℓ	2,4	240	3	ℓ — ℓ
05.6	N16	4945	4911	2000	2	ℓ — ℓ	2	(50)	(1)	ℓ \ d
05.7	N02	4946	New	900	2	ℓ — ℓ	1			
06.3	S14	4947	New	3200	2.5	ℓ — ℓ	1	780	7	ℓ — ℓ
07.6	N34	4950	New	2700	2.5	ℓ — ℓ	1	190	3	ℓ — ℓ
07.7	N20	4951	New	8500	3.5	ℓ — ℓ	1	1040	59	ℓ — ℓ
07.9	S04	4949	4913	9000	3	ℓ — ℓ	4	260	14	ℓ — ℓ
09.0	S29	4957	New	1800	2	ℓ — ℓ	1	220	3	b Λ d
09.4	S15	4952	4916	3200	3	ℓ — ℓ	2	390	5	ℓ \ ℓ
10.2	S04	4955	New	1100	3	ℓ — ℓ	1	140	3	ℓ — ℓ
10.6	N14	4953	4919	11,000	3.5	ℓ — ℓ	2	2980	2	ℓ — ℓ
11.3	S28	4958	New	500	2	ℓ — ℓ	1			
11.4	S14	4956	4918	4400	2	ℓ — ℓ	5			
11.7	N29	4966	New	(1000)	(2.5)	b Λ d	1			
13.1	S13	4961	New	(900)	(2.5)	ℓ — ℓ	1			
13.5	N21	4959	4920	4600	3	ℓ — ℓ	2	20	2	ℓ ‾\ d
14.3	N07	4960	4922	2100	2.5	ℓ \ ℓ	5			
15.9	N22	4962	4924	(3000)	(2.5)	ℓ — ℓ	2	440	9	ℓ — ℓ
16.0	S05	4967	New	(800)	(2.5)	b /‾ ℓ	1	(140)	(6)	b /‾ ℓ
17.4	N34	4975	New	500	2	b Λ d	1			
17.5	N16	4963	4926	1100	2	ℓ — ℓ	3			
18.3	N11	4964	4927	2800	3	ℓ — ℓ	3			
18.7	N22	4965	4927	(2500)	(2.5)	ℓ ‾\ d	3			
18.7	S06	4968	4926	(4000)	(3.5)	ℓ \ d	3	(20)	(1)	ℓ \ d
20.6	S17	4970	**	700	1.5	ℓ — ℓ	(8),2			
20.9	N17	4969	4932	13,000	3	ℓ — ℓ	3	1140	60	ℓ — ℓ
22.1	N01	4971	New	400	2	ℓ \ d	1			
23.0	N08	4973	New	7200	3	ℓ — ℓ	1	2730	9	ℓ — ℓ
23.4	N19	4974	4937	6000	3	ℓ — ℓ	2	410	6	ℓ — ℓ
23.8	S16	4972	4934	9500	3	ℓ — ℓ	5	(200)	(6)	ℓ \ d
25.0	N17	4976	4936	9200	3.5	ℓ — ℓ	2	1150	63	ℓ — ℓ
25.7	S08	4977	New	1300	2.5	ℓ — ℓ	1	60	7	ℓ \ d
26.1	N35	4978	New	2500	3	ℓ — ℓ	1	50	9	ℓ \ d
27.3	N07	4980	4938	1500	2.5	ℓ ‾\ d	6	70	10	ℓ ‾\ d
27.4	N20	4979	New	4000	3	ℓ — ℓ	1	140	13	ℓ ‾\ d
28.0	S11	4987	New	1000	3.5	b / ℓ	1	530	5	b / ℓ
28.5	S18	4988	4939	300	1.5	ℓ — ℓ	3			
30.6	N02	4982	4954	2500	2.5	ℓ \ ℓ	2	60	4	ℓ — ℓ
31.2	N21	4983	4943	5000	3	ℓ \ ℓ	2	(140)	(16)	ℓ ‾\ d

* 4906, 4909
** 4929, 4930

Errata: The plage at CMP 02.9 October 1958 (CRPL-F 171 B, November 1958), position N09, should be plage number 4797, not 4897.

CORONAL LINE EMISSION INDICES

JANUARY 1959

CMP Jan. 1959	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	86	112	22	30	212	300	37	66	98	136	22	48	79	88	24	33
2	86	112	13	24	101	142	24	36	66	113	19	64	72	96	30	72
3	100	124	32	42	111	154	33	66	85	140	23	62	116	167	26	72
4	87	128	43	80	81	132	30	76	63	99	30	48	104	134	38	60
5	173	232	x	x	74	193	x	x	x	x	22	48	190	220	40	61
6	x	x	x	x	x	x	x	x	137a	233a	x	x	x	x	x	x
7	214*	286	45	66	139	204	61	36	178	321	x	x	221 *	327	x	x
8	138	159	40	60	151 *	176	23	52	139	168	38	104	110	136	32	66
9	108	142	40	56	134	175	34	54	x	x	x	x	x	x	x	x
10	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
11	108	160	x	x	127	177	x	x	100	108	30	48	141 *	189	19	36
12	160	207	26	30	124	167	19	33	x	x	x	x	x	x	x	x
13	151	180	32	42	79	98	19	30	x	x	x	x	x	x	x	x
14	129	180	44	96	57	68	13	18	x	x	x	x	x	x	x	x
15	107	126	30	48	68	96	11	15	x	x	x	x	x	x	x	x
16	68	93	31	60	46	56	13	30	x	x	x	x	x	x	x	x
17	79	116	37	102	42	62	17	30	59	83	21	48	76	140	48	90
18	82	93	52	98	92	135	35	58	68	115	13	30	83	104	52	84
19	203	313	37	55	139	240	24	48	x	x	x	x	x	x	x	x
20	94	132	x	x	74	88	x	x	76	104	13	24	89 *	144	40	60
21	174	351	x	x	121	183	x	x	128	175	26	73	125 *	171	56	67
22	116	151	48	72	101	152	34	66	x	x	x	x	x	x	x	x
23	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
24	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
25	177*	221	83	120	112	152	22	48	x	x	x	x	x	x	x	x
26	x	x	x	x	x	x	x	x	89	97	16	24	142	186	53	64
27	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
28	x	x	x	x	x	x	x	x	47	63	11	18	93	116	27	54
29	x	x	x	x	x	x	x	x	49	70	9	18	145	180	26	50
30	x	x	x	x	x	x	x	x	28	53	10	12	94	144	37	78
31	118 *	192	53	108	45	92	28	60	89	172	x	x	251	400	x	x

x - no observations. a - index computed from low weight data. * - yellow line observed.

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

JANUARY 1959

OBSERVATORY	DATE JAN 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
SIMEIZ	01	0855	0950	0902	S11	W64	4934	55	1&							
CAPRI-S	01	0855 E	1001 D		S14	W58	4934	66 D	2	2	0905	3.50	7.70			S-SWF
MEUDON	01	0913 E			S13	W63	4934		1							
MITAKA	02	0147 E	0154		N14	W60	4936	7 D	1	2	0147	.89	1.78	1.41	100	
WENDEL	02	0826 E	0843 D		N18	W87	4932	17 D	1				4.00			
WENDEL	02	0912	0951	0917	S13	W67	4934	39	2				9.00			S-SWF
CAPRI-S	02	0914 E	0956 D		S13	W67	4934	42 D	2	3	0924	3.00	7.20			
WENDEL	02	1033	1110 D		N22	E28	4943	37 D	1				3.00			
WENDEL	02	1104 E	1129 D		N18	W88	4932	25 D	1&				5.00			
WENDEL	02	1209 E	1228 D		N22	E29	4943	19 D	1				3.00			
USNRL	02	1337	1413	1343	N12	W64	4936	36	1	1	1343	1.08	2.60	2.00	69	
USNRL	02	1421	1507	1430	S16	W85	4934	46	2	2	1430	4.52		2.00	103	Slow S-SWF
KANZELHOHE	02	1436 E	1450		S13	W82	4934	14 D	2&							
USNRL	02	1518	1607	1521	S12	W70	4934	49	1	2	1521	.96	2.82	2.00	80	G-SWF
USNRL	02	1949	2001	1954	S16	E53	4947	12	1	1	1954	1.75	2.96		88	
USNRL	03	1335	1357	1339	S22	W77	4934	22	1	3	1339	.90	4.55		81	
USNRL	03	1617	1702 D	1638	S12	W90	4934	45 D	1&	3	1638	3.50			82	Slow S-SWF
CAPRI-S	04	1125 E	1225 D		N10	W90	4938	60 D	1	1	1208	2.00				
SAC PEAK	04	1720	1750	1725	S08	E45	4949	30	1	2		2.20			16	
SAC PEAK	04	2057	2125	2102	N13	E86	4953	28	1	2					20	
MITAKA	05	0110 E	0113		N12	E84	4953	3 D	1	1	0111	.89		2.11	96	
MITAKA	05	0255	0307 D	0305	S11	E13	4947	12 D	1	1	0255	3.80	4.06	1.52	137	
MITAKA	05	0322 E	0400	0322	S11	E13	4947	38 D	1&	1	0342	5.58	5.97	1.42	152	G-SWF
UCCLE	05	1020 E			N23	E26	4951		2							
STOCKHOLM	05	1052 E	1138 D		N26	E30	4951	46 D	2	1	1102	5.00	6.50			
CAPRI-S	05	1110 E	1220 D		N25	E25	4951	70 D	2	3	1126	4.50	5.40			
NEDERHORST	05	1120 E			N26	E24	4951		2&							
CAPRI-S	05	1140 E	1220 D		S18	W23	4944	40 D	1	3	1150	1.80	2.20			
CLIMAX	05	1832	1918	1859	N23	E26	4951	46	1		1859	2.10				
MCMATH	05	1856	1915	1859	N25	E22	4951	19	1	2	1859	1.95	2.38		68	
SAC PEAK	05	1857	1917	1900	N25	E22	4951	20	1	2					16	
MCMATH	05	1911	1921	1916	N11	E77	4953	10	1	2	1916	.97	2.58			
USNRL	05	2036	2050	2038	N12	E68	4953	14	1	1	2038	1.02	2.10	1.50	80	
CLIMAX	05	2055	2132	2113	N24	E23	4951	37	1		2113	2.20				
USNRL	05	2056	2101 D		N25	E21	4951	5 D	1	1	2101	2.60	3.14		78	
SAC PEAK	05	2105 E	2130	2109	N25	E22	4951	25 D	1	2		3.50			15	
MITAKA	06	0247	0253		N04	W30	4954	6	1	1	0249	.89	1.01	1.86	96	
CAPRI-S	06	1518 E	1547 D		N11	E58	4953	29 D	1	2	1537	3.00	6.00			
MITAKA	07	0115	0123		N07	W73	4954	8	1	1	0117	.82	.94	2.01	102	G-SWF
MITAKA	07	0218	0241		S14	W03	4947	23	1	1	0233	.41	.41		107	
MITAKA	07	0218	0305		S12	W10	4947	47	1&	1	0220	5.66	5.76	2.86	120	
MITAKA	07	0420	0430		N07	E47	4953	10	1	1	0421	1.30	2.03	2.43	143	
SAC PEAK	07	1750 E	2045	1935	N25	W03	4951	175 D	2	2		8.40			17	
SAC PEAK	08	1627	1700	1637	N20	W18	4951	33	1	2		2.50			17	

SOLAR FLARES

JANUARY 1959

OBSERVATORY	DATE JAN 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
DUNSINK	09	1154	1215		S10	W42	4947	21	1	1	1203			2.55		
MCMATH	09	1541	1624	1556	N22	W33	4951	43	1&	1	1556	3.25	4.29		63	Slow S-SWF
MCMATH	09	1823	1910	1828	N18	W58	4945	47	1	1	1828	1.95	3.90		59	
USNRL	09	1826 E	1859		N15	W54	4945	33 D	1	1	1828	1.92	3.76		91	
MCMATH	09	1936	2000 D	1943	N19	W34	4951	24 D	1	1	1943	2.11	2.77		67	
HAWAII	10	0044	0100		N16	W05	4953	16	1	2	0046	2.50	2.70			
USNRL	10	1316	1352	1319	N17	W29	4951	36	1	2	1319	1.36	1.69		127	
MEUDON	10	1200 E	1432 D		N10	E10	4953	152 D	1&				15.00			
USNRL	10	1339	1419	1349	N13	E09	4953	40	1	2	1349	1.24	1.32	1.00	107	
USNRL	10	1430	1540	1432	N07	E05	4953	70	1	2	1432	1.02	1.05		101	
USNRL	10	1451	1527	1455	N13	E09	4953	36	1	2	1455	1.02	1.07		107	
USNRL	10	1354	1418	1357	S15	W60	4947	24	1	3	1357	.79	1.61	1.00	109	
MITAKA	11	0117	0135	0124	N18	W33	4951	18	1	2	0125	1.30	1.70	2.08	125	
MITAKA	12	0431 E	0437		N23	E49	4962	6 D	1	1	0431	.62	1.07	1.80	120	
MITAKA	12	0443	0451	0446	N18	W15	4953	8	1	1	0443	.89	.99	1.83	137	
MEUDON	12	0948	1105		N22	E47	4962	77	1				3.00			
MEUDON	12	1441	1525 D		N09	W36	4953	44 D	1				4.00			
SAC PEAK	12	2045	2105	2052	N11	W32	4953	20	1&	2		4.80			16	
MEUDON	13	0757 E	0915		N22	E36	4962	78 D	1&				7.00			
MEUDON	13	1030	1115 D	1033	N22	E36	4962	45 D	1&				7.00			
CAPRI-S	13	1207	1300 D		N20	E29	4962	53 D	1	2	1238	2.00	2.50			
USNRL	13	1440	1516	1444	N11	W36	4953	36	1	2	1444	.79	1.07		106	
USNRL	13	1459	1551	1502	N23	E28	4962	52	1	2	1502	1.81	2.37		93	
USNRL	13	1520	1545	1524	N18	W75	4951	25	1	2	1524	1.47	4.70	1.00	91	
USNRL	13	1648	1702	1651	N22	E26	4962	14	1	2	1651	2.32	2.99		88	
USNRL	13	1651	1846	1655	N11	W37	4953	115	1	2	1705	1.52	2.06		126	
USNRL	13	1838	1929	1841	N22	E26	4962	51	1	2	1841	2.04	2.55	1.00	91	
USNRL	13	1928	2029	1933	N11	W39	4953	61	1	2	1933	1.19	1.62	1.00	113	
USNRL	13	2020	2053	2022	N18	W80	4951	33	1	2	2022	.68	2.80		68	
USNRL	14	1406	1516	1410	N28	W12	4959	70	2&	2	1410	4.97	5.97	2.00	130	S-SWF
HUANCAYO	14	1649 E	1655	1649	N26	W17	4959	6 D	1	2	1651	2.20	2.60	2.60		
USNRL	14	1949	2005 D	1950	S03	W67	4955	16 D	1	1	1950	.56	1.36	1.00	124	
SAC PEAK	14	2020	2050	2032	N27	W15	4959	30	1	2		2.10			18	
HAWAII	14	2030 E	2050 D	2034	N29	W13	4959	20 D	1	3	2034	2.10	2.60			
USNRL	14	2039 E	2047 D		N28	W16	4959	8 D	1	1	2039	.68	.84		138	
HAWAII	16	1914	1936		N28	E55	4969	22	1	2	1920	2.20	5.00			
HAWAII	16	2336	2340 D	2340	S06	E72	4972	4 D	1	3	2340	2.50	7.90			
ONDREJOV	17	0758 E	0808 D		S11	E67	4972	10 D	1	3	0800			2.30		
WENDEL	17	0830 E	0901 D		N06	E64	4973	31 D	1				3.00			
USNRL	17	1705	1724 D	1712	N18	E47	4969	19 D	1&	2	1712	1.48	2.41		137	
HAWAII	18	0030 E	0032 D		N15	E40	4969	2 D	1&	1	0030	4.10	5.70			
MITAKA	18	0209	0218		S01	E55	4971	9	1	1	0210	1.84	3.13	1.86	120	
MITAKA	19	0030	0118	0035	N20	E35	4969	48	2	1	0039	6.44	8.24	2.04	165	Slow S-SWF

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WENDEL	19	1016	1044 D		N07	E49	4973	28 D	1				4.00			
WENDEL	19	1013	1025 D		N07	E80	4976	12 D	1+				6.00			
ONDREJOV	19	1023 E	1031 D		N13	E85	4976	8 D	1+	3	1024			3.90		
WENDEL	19	1024 E	1032 D		N13	E85	4976	8 D	1+				5.00			
WENDEL	19	1125			N09	E54	4973		1				3.00			
WENDEL	19	1204 E	1216		N13	E84	4976	12 D	1				4.00			
HUANCAYO	19	1554	1603	1555	N15	E81	4976	9	1	2	1555	.40	2.60	5.40		Slow S-SWF
SAC PEAK	19	2037	2117 U	2052	N12	E45	4973	40	1+	2		4.50			15	
SAC PEAK	19	2130	2155	2147	N07	E43	4973	25	1	2		2.30			15	
CAPRI-S	20	0922	1005 D		N10	E62	4976	43 D	2	3	0943	4.00	9.20			
CAPRI-S	20	1104	1156 D		N17	E17	4969	52 D	2	3	1121	5.00	5.50			
DUNSINK	20	1110	1135		N18	E15	4969	25	1	1	1117	1.25	1.40	2.50		
DUNSINK	20	1237 E	1254		N22	E90	4979	17 D	1	1	1239			3.85		
CAPRI-S	20	1248 E	1317 D		N15	E70	4976	29 D	1	2	1257	.50	1.40			
HAWAII	21	0048	0100	0052	N07	E08	4969	12	1	3	0052	2.10	2.30			
MITAKA	21	0258 E	0331	0305	N16	W04	4969	33 D	1+	1	0302	4.12	4.45	2.08	162	
NIZAMIAH	21	0315 E	0359	0337	N20	E03	4969	44 D	2							G-SWF
MITAKA	21	0337	0414	0351	N20	E04	4969	37	1+	1	0350	7.48	8.38	2.71	146	
WENDEL	21	1202	1305 D		N16	E07	4969	63 D	1+				6.00			
WENDEL	21	1232	1250		N13	E10	4969	18	1+				6.00			
ONDREJOV	21	1234 E	1240 D		N13	E11	4969	6 D	1	2	1238			2.50		
WENDEL	21	1225	1242		N13	E54	4976	17	1				4.00			
CAPRI-S	21	1252 E	1423 D		S13	E25	4972	91 D	2	2	1357	5.00	5.70			
WENDEL	21	1347 E	1436 D		S14	E30	4972	49 D	2+				13.00			
CAPRI-S	21	1333	1343 D		N17	E57	4976	10 D	1	2	1335	2.00	4.00			
HUANCAYO	21	1623	1720	1625	N15	E10	4969	57	1	1	1625	3.60	3.90	2.40		Slow S-SWF
SAC PEAK	21	1700	1750	1709	N09	E48	4976	50	3	2		12.80			35	S-SWF
HUANCAYO	21	1702 E	1719 D	1709	N10	E48	4976	17 D	2+	1	1709	5.70	9.00	6.50		
SAC PEAK	21	2217	2242	2225	N09	E05	4969	25	1	1		2.10			20	
HAWAII	21	2218	2250	2226	N11	E04	4969	32	1+	3	2226	4.00	4.20			
R O HERST	22	1122 E	1145	1130 U	N08	W02	4969	23 D	1	2	1131	1.80	1.80	3.51	109	
WENDEL	22	1132 E	1146		N08	W03	4969	14 D	1+				5.00			Slow S-SWF
WENDEL	22	1136	1202 D		N20	W10	4969	26 D	1				4.00			
USNRL	22	1521	1557	1523	N09	W18	4969	36	1+	3	1523	1.92	2.10		143	Slow S-SWF
CAPRI-S	22	1523 E	1547		N06	W18	4969	24 D	1	2	1523	4.00	4.00			
MCMATH	22	1544	1600	1547	N08	W05	4973	16	1+	2	1547	2.76	2.87		86	
CAPRI-S	22	1545	1553 D		N05	W05	4973	8 D	1	2	1547	3.00	3.00			
HUANCAYO	22	1545	1608	1547	N08	W03	4973	23	1	2	1547	2.50	2.50	6.50		
USNRL	22	1545	1614	1548	N07	W04	4973	29	1+	3	1548	2.71	2.78		189	
SAC PEAK	22	1550 E	1607	1550	N07	W05	4973	17 D	1	1		2.80			32	
USNRL	22	1815	1910	1823	N07	W07	4973	55	1	3	1823	1.42	1.44	2.00	162	
USNRL	22	1924	2033	1934	N17	E36	4976	69	1+	3	1934	1.75	2.39	2.00	130	
HAWAII	22	1928	2022	1934	N19	E36	4976	54	1+	3	1934	3.70	5.20			G-SWF
MCMATH	22	1929	2006 D	1935	N24	E34	4976	37 D	1	1	1945	2.43	3.31		63	
SAC PEAK	22	2025	2107	2030	N09	E33	4976	42	1	1		2.10			25	
USNRL	22	2025	2113 D	2028	N09	E32	4976	48 D	1+	2	2028	1.69	2.06	2.00	138	
HAWAII	22	2026	2103	2030	N10	E32	4976	37	1+	3	2030	3.70	4.60			
HUANCAYO	22	2027	2059	2028	N08	E32	4976	32	1	1	2028	3.60	4.50	3.90		

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USNRL	22	2046	2113 D	2053	N17	E36	4976	27 D	1	2	2053	1.07	1.47		104	
USNRL	22	2050	2113 D	2057	N08	W08	4973	23 D	1&	2	2057	3.96	4.11	2.00	172	
HUANCAYO	22	2057	2111	2059	N08	W05	4973	14	1	2	2059	4.10	4.20	4.70		
HAWAII	22	2058	2126	2058	N08	W09	4973	28	2	3	2058	6.30	6.50			
SAC PEAK	22	2100 E	2145	2100 U	N09	W09	4973	45 D	1	1		3.80			20	
ONDREJOV	23	0827	0848		N16	W18	4969	21	1	3	0832			2.60		
MEUDON	23	1023 E			N19	W04	4974		1							
USNRL	23	1824	1850	1827	N16	W27	4969	26	1	1	1827	1.02	1.24	1.00	128	
USNRL	23	2033	2100 D	2035	N17	E24	4976	27	1	2	2035	.90	1.07		134	
HAWAII	24	0028	0042 D	0032	S13	W11	4972	14 D	1	2	0032	2.90	3.00			
CAPRI-S	24	1115	1206 D		N09	W16	4973	51 D	1	3	1137	3.00	3.00			
ONDREJOV	24	1129 E	1146 D		N11	W19	4973	17 D	1&							
ONDREJOV	24	1130 E	1146 D		N11	W20	4973	16 D	1&	2	1130			3.00		
DUNSINK	24	1306 E	1311		N03	W15	4973	5 D	1	1	1306	1.25	1.31	2.80		
USNRL	24	1452	1638	1453	N12	W19	4973	106	1	1	1520	1.81	2.00		116	
USNRL	24	1454	1524	1457	S07	E22	4977	30	1	2	1457	1.41	1.52		163	G-SWF
SAC PEAK	24	1532	1635	1540	N18	W20	4974	63	1	2		2.90			20	Slow S-SWF
USNRL	24	1532	1701 D	1537	N19	W21	4974	89 D	1&	2	1537	1.87	2.16	2.00	166	
HAWAII	25	0210	0240 D	0220	N14	W47	4969	30 D	2	3	0220	5.40	8.10			S-SWF
MITAKA	25	0225 E	0238		N16	W44	4969	13 D	1	1	0229	3.20	4.61	2.20	105	
MEUDON	25	0807 E	0840		N20	E05	4976	33 D	1&				8.00			
MEUDON	25	1108	1125	1114	N12	W33	4973	17	1				3.00			
KANZELHOHE	25	1325 E	1435		N07	W30	4973	70 D	2&							
USNRL	25	1332	1433	1337	N09	W32	4973	61	1	2	1337	1.24	1.51	1.50	159	
STOCKHOLM	25	1333	1420 D		N09	W32	4973	47 D	2	1	1358	4.00	4.80			
STOCKHOLM	25	1333	1420 D		N09	W32	4973	47 D	2							
ONDREJOV	25	1402 E	1412		N11	W36	4973	10 D	1	2	1402			3.00		
ONDREJOV	25	1406	1419 D		N11	W32	4973	13 D	1&	1	1408			3.60		
USNRL	25	1424	1455	1428	N12	W35	4973	31	1&	2	1428	1.81	2.31	1.50	137	
USNRL	25	1406	1550	1410	N17	W52	4969	104	1	2	1410	2.04	3.56	1.50	101	
STOCKHOLM	25	1410 E	1420 D		N21	W47	4969	10 D	1	1	1420	2.00	3.20			Slow S-SWF
KANZELHOHE	25	1415	1447		N18	W44	4969	32	2							
USNRL	25	1437	1703 D	1549	N16	W46	4969	146 D	1&		1549	1.92	2.95	2.00	108	
SAC PEAK	25	1540	1810 U	1620	N15	W49	4969	150 D	1	2		2.50			17	
SAC PEAK	25	1925	2045	2005	N12	W36	4973	80	2	2		8.70			22	
HAWAII	25	2002	2026	2006	N08	W37	4973	24	2	3	2006	7.20	9.50			
KANZELHOHE	26	0800 E	0810		N08	W44	4973	10 D	2							
CAPRI-S	26	0849	1017 D		N14	W62	4969	88 D	2	3	0903	5.00	12.00			S-SWF
ONDREJOV	26	0902 E	0925 D		N05	W65	4969	23 D	1&	3	0902			3.00		
CAPRI-S	26	1041 E	1210 D		N12	W60	4969	89 D	2	3	1050	5.00	10.20			
MEUDON	26	1050 E	1110 D		N17	W65	4969	20 D	1&							
UCCLE	26	1055 E	1135		N15	W62	4969	40 D	3							
STOCKHOLM	26	1118 E	1145 D		N17	W59	4969	27 D	1	1	1120	1.50	3.00			
MEUDON	26	1135 E	1315		N17	W62	4969	100 D	1&				8.00			
MCMATH	26	1400 E	1445 D	1414	N10	W50	4973	45 D	1&	2	1414	2.76	4.31		79	
MEUDON	26	1401	1420	1412	N12	W50	4973	19	1				5.00			
MCMATH	26	1541	1555 D	1548	N08	W50	4973	14 D	1	2	1548	1.46	2.28			

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MCMATH	26	1601	1625 D	1611	N10	W50	4973	24 D	1	2	1611	1.62	2.53		63	
MCMATH	26	1606	1626	1611	N18	E62	4983	20	1	2	1611	1.62	3.85		63	
MCMATH	26	1720	1755 D	1728	N10	W50	4973	35 D	1	1	1728	2.44	3.80		68	G-SWF
SAC PEAK	26	1720	1802	1727	N10	W50	4973	42	1	2					15	
SAC PEAK	26	1732	1745	1737	N12	E90	4989	12	1	2					20	
MCMATH	26	1734 E	1800 D		N11	E90	4989	26 D	□	1						
MCMATH	26	1738	1840 D		N09	W13	4976	62 D	1	1	1750	2.27	2.41			
MCMATH	26	1823 E	1900 D		N18	E61	4983	37 D	1	1	1839	.89	2.10		66	
MCMATH	26	1830 E	1908		N10	W50	4973	38 D	1	1	1940	2.11	3.29		72	
MCMATH	26	1858	2015 D	1925 U	N09	W13	4976	77 D	1+	2	1925	3.58	3.79		75	
MCMATH	26	2002	2017 D		N11	W51	4973	15 D	1	1	2012	1.30	2.26			
SAC PEAK	26	2057	2140	2115	N19	W46	4974	43	1	2		2.50			14	
HAWAII	27	0038	0056 D	0044	N05	W56	4973	18 D	1	2	0044	2.90	5.50			S-SWF
MEUDON	27	0930	1030	0937	N12	W20	4976	60	1+				6.00			
STOCKHOLM	27	0934 E	0955 D		N08	W21	4976	21 D	1	2	0942	3.50	3.80			
MEUDON	27	1212	1246 D		N20	E58	4983	34 D	1				3.00			
CAPRI-S	27	1216 E	1250 D		N20	E45	4983	34 D	1	1	1222	2.00	3.20			
MEUDON	27	1325	1410	1335	N06	E45	4982	45	1+				4.00			
CAPRI-S	27	1329 E	1422 D		N05	E40	4982	53 D	1	1	1340	3.00	4.50			S-SWF
NEDERHORST	27	1330 E	1400 D		N06	E43	4982	30 D	2							
WENDEL	27	1358	1415 D		S09	E05	4987	17 D	1				4.00			Slow S-SWF
WENDEL	27	1350 E	1415 D		N07	W59	4973	25 D	2				12.00			
CAPRI-S	27	1403	1505 D		N06	W58	4973	62 D	2	2	1434	4.50	9.00			
MCMATH	27	1410 E	1520	1432	N10	W62	4973	70	2+	2	1432	4.38	9.64		98	
MEUDON	27	1424	1500	1432	N12	W60	4973	36	2				12.00			
UCCLE	27	1425 E			N10	W60	4973		2							S-SWF
MEUDON	27	1426	1500	1432	N12	W60	4973	34	2							
R O HERST	27	1428 E	1447	1428 U	N10	W60	4973	16 D	1	2	1430	1.80	4.10	3.16		
ARCETRI	27	1435 E			N08	W60	4973		2	3	1435	3.00	6.00			
NEDERHORST	27	1438 E	1441 D		N10	W60	4973	3 D	2							
MEUDON	27	1408	1423		N02	E37	4982	15	1				3.00			
MCMATH	27	1410 E	1435 D		N02	E40	4982	25 D	1+	1	1412	3.08	4.01		69	
SAC PEAK	27	1630	1655	1637	N21	E48	4983	25	1	2		2.70			18	
MCMATH	27	1633	1710	1638	N22	E50	4983	37	2	3	1538	3.41	5.46		80	
MCMATH	27	1755	1828	1803	N18	E47	4983	33	1+	3	1803	2.03	3.25		74	S-SWF
MCMATH	27	1852 E	1930 D		N23	E51	4983	38 D	1	1	1919	1.46	2.54			
SAC PEAK	27	1940	2010	1945	S12	E05	4987	30	1+	2		4.80			28	
HAWAII	27	1940	2012	1944	S12	E06	4987	32	1	3	1944	3.40	3.40			
MCMATH	27	1940	2013	1945	S11	E04	4987	33	2	3	1945	5.85	5.85		93	
SAC PEAK	27	2117	2142	2122	S10	E04	4987	25	1	2		2.50			14	
ARCETRI	28	0819 E			N20	W82	4969		1	2	0819	.70	5.00			
WENDEL	28	1242 E	1340 D		N08	W75	4973	58 D	1+				6.00			
USNRL	28	1315 E	1338		N07	W72	4973	23 D	1	1	1324	.79	2.53		68	
STOCKHOLM	28	1317 E	1325 D		N06	W71	4973	8 D	1	1	1320	1.00	3.30			
WENDEL	28	1408 E	1423		N13	W37	4976	15 D	1				3.00			
CAPRI-S	28	1505 E	1544 D		N13	W37	4976	39 D	1	3	1529	2.00	2.60			
MCMATH	28	1521	1558	1529	N16	W39	4976	37	1	1	1529	1.95	2.73		82	Slow S-SWF
USNRL	28	1522	1554	1525	N16	W40	4976	32	1	2	1525	1.36	2.10		132	
SAC PEAK	28	1522	1600	1530	N15	W37	4976	38	1	2		2.30			18	

SOLAR FLARES

JANUARY 1959

OBSERVATORY	DATE JAN 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
USNRL	28	1621	1630	1625	N21	W70	4974	9	1	2	1625	.79	2.84		95	
MCMATH	28	1623	1634	1627	N22	W76	4974	11	1	1	1627	1.95	6.43		58	
MCMATH	28	1734	1830 D		N10	W40	4976	56 D	1	1	1747	2.19	3.09			
MCMATH	28	1800	1840 D		N23	W50	4976	40 D	1	1	1818	2.43	4.26			
SAC PEAK	28	1932	2030 U	1937	N14	W40	4976	58 D	2	2		6.60			30	
USNRL	28	1933	2027	1938	N16	W40	4976	54	1	1	1938	1.36	1.90		120	Slow S-SWF
HAWAII	28	1934	2008	1938	N13	W45	4976	34	1&	3	1938	4.10	6.20			
MCMATH	28	1934	2020 D	1939	N14	W42	4976	46 D	1&	1	1939	2.43	3.43		89	
USNRL	28	1947	2007	1951	N12	W81	4973	20	1&	1	1951	.79	4.02	1.00	170	
HAWAII	28	2310	2330	2314	N17	E47	4986	20	1	3	2314	2.60	3.40			
HAWAII	29	0040	0118	0048	N20	E26	4983	38	1&	3	0048	3.90	4.90			
WENDEL	29	0942 E	1001 D		N08	W79	4973	19 D	1&				5.00			
MEUDON	29	1013	1019	1017	N20	W90	4974	6	1							
WENDEL	29	1439 E	1455 D		N04	E15	4982	16 D	2				10.00			
MEUDON	29	1444 E	1503		N05	E10	4982	19 D	2				8.00			
CAPRI-S	29	1448 E			N01	E12	4982		1	1	1450	4.00	4.00			
HAWAII	29	2112 E	2126		N17	W43	4976	14 D	1	3	2112	2.10	3.10			
ONDREJOV	30	0808 E	0819		N19	W29	4979	11 D	1	3	0810			2.20		
MEUDON	30	0834	0937	0907	N07	E05	4982	63	1				4.00			
CAPRI-S	30	0848 E	0925 D		N02	E04	4982	37 D	1	3	0850	3.50	3.50			
ONDREJOV	30	0858 E	0913 D		N03	E02	4982	15 D	1	3	0900			2.60		
WENDEL	30	1047 E	1100 D		N19	E05	4983	13 D	1				4.00			
MEUDON	30	1321	1400	1330	N22	E60	4992	39	1				4.00			
WENDEL	30	1324 E	1404		N20	E55	4992	40 D	1&				6.00			
ONDREJOV	30	1325 E	1341 D		N22	E54	4992	16 D	1&	3	1330			2.80		
CAPPI-S	30	1327 E	1350 D		N30	E55	4992	23 D	1	3	1327	2.50	5.00			
DUNSINK	30	1331 E	1340		N25	E59	4992	9 D	1	1	1331	2.00	4.06	1.90		
CAPRI-S	30	1540 E	1558 D		N19	W72	4976	18 D	1	3	1545	1.50	5.70			
HAWAII	30	2342	0010	2348	N14	E90	4997	28	2	3	2348	6.20				Slow S-SWF
HAWAII	31	0108	0152	0112	N22	E00	4983	44	2	3	0112	6.20	7.10			Slow S-SWF
MITAKA	31	0114 E	0136 D	0115	N22	E05	4983	22 D	2	1	0114	5.94	6.71	2.96	188	
MEUDON	31	0827	0844		S10	W44	4987	17	1				3.00			
CAPRI-S	31	0828 E	0843 D		S11	W42	4987	15 D	1	3	0831	2.00	2.80			
CAPRI-S	31	0845 E	0925 D		N18	W75	4976	40 D	1	3	0847	.50	2.20			
WENDEL	31	1010 E	1034 D		N12	E59	4992	24 D	1&				5.00			
WENDEL	31	1258 E	1420 D		N21	E56	4992	82 D	1&				6.00			
MCMATH	31	1441	1515	1448	N21	W04	4983	34	1	1	1448	2.28	2.55		88	
CAPRI-S	31	1442 E	1503 D		N12	W02	4983	26 D	1	3	1450	4.50	4.70			

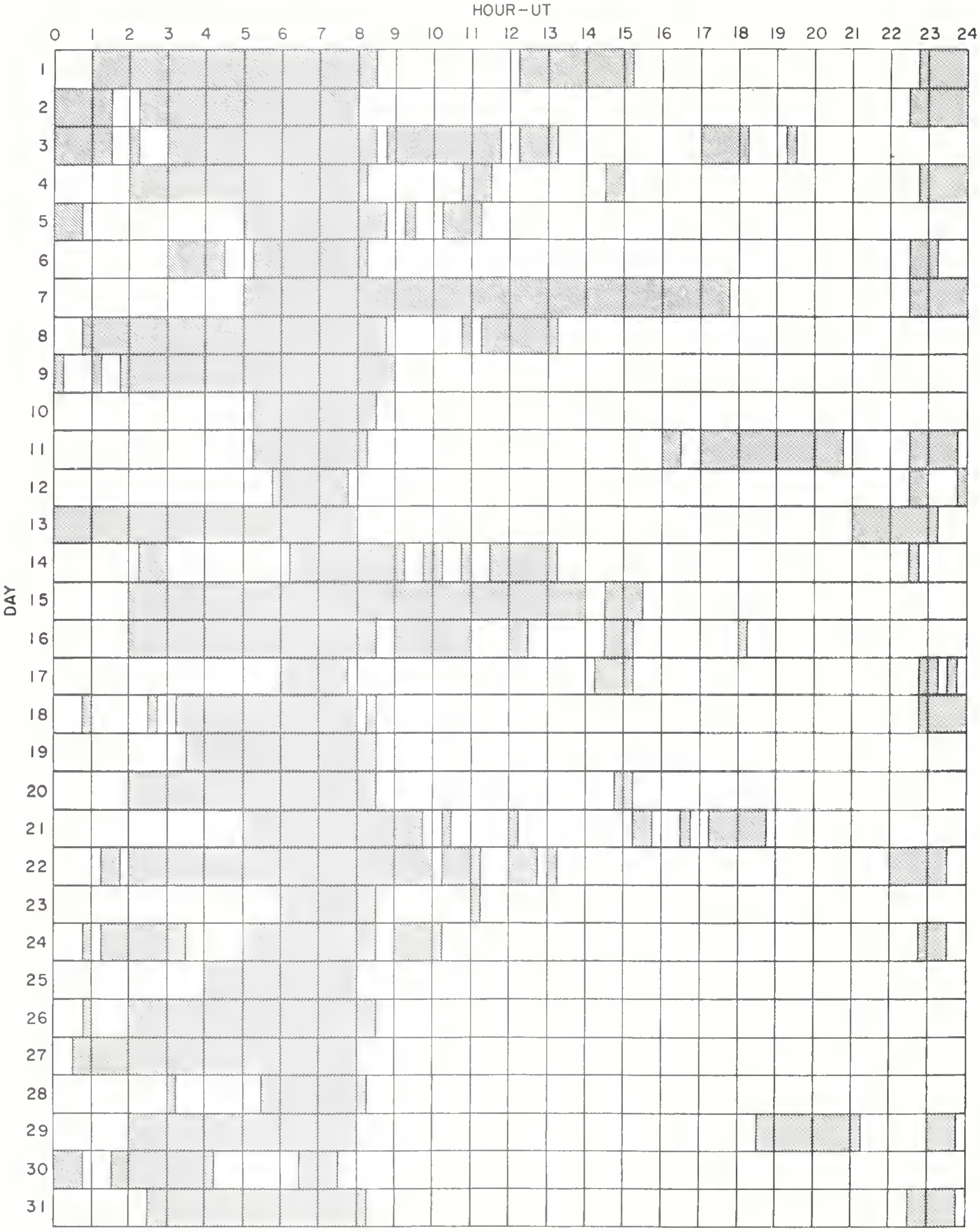
CAPRI G — ANACAPRI - CERMAN
CAPRI S — ANACAPRI - SWEDISH
GOOD HOPE — ROYAL OBSERVATORY, CAPE OF COOD HOPE
KIEV* — KIEV UNIVERSITY
KODAIKNAL — KODAIKANAL
KRASNYA — KRASNAYA PAKHRA
MOSCOW — NIZMIR
MOSCOW-C — MOSCOW - CAISH
R O EDIN — ROYAL OBSERVATORY, EDINBURGH
R O HERST — CREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK — SACRAMENTO PEAK
SCHAUINS — SCHAUINSLAND
USNRL — UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

E - LESS THAN   & - PLUS
D - GREATER THAN   - - MINUS
U - APPROXIMATE   □ - NOT REPORTED

INTERVALS OF NO FLARE PATROL OBSERVATIONS

JANUARY 1959



Stations Include:

Arcetri
Anacapri (Swedish)
Climax 1-6
Dunsink
Greenwich
Hawaii
Huancayo
Meudon
Mitaka
Ondrejov
Sacramento Peak
U.S. Naval Research Laboratory.

SUBFLARES

Noted as follows: Date-Universal Time-Coordinates

DECEMBER 1958

STOCKHOLM	01	0902 E	N06 E40
*STOCKHOLM	01	1016 E	S10 E37
*STOCKHOLM	01	1312 E	S10 E37
STOCKHOLM	01	1322 E	N05 E42
SAC PEAK	01	1455	S16 W10
SAC PEAK	01	1512	S09 E32
SAC PEAK	01	1545	S10 E33
*HUANCAYO	01	1616 E	S11 W48
SAC PEAK	01	1645	N09 E38
SAC PEAK	01	1737	S13 W23
SAC PEAK	01	1747	S15 W26
SAC PEAK	01	1755	S15 W15
SAC PEAK	01	1952	N09 E36
HAWAII	01	1952	N05 E35
USNRL	01	1953	N09 E35
*SAC PEAK	01	2002	N08 W27
*HAWAII	01	2006	N13 W32
*USNRL	01	2008 E	N08 W28
USNRL	01	2022	S08 E32
USNRL	01	2033	N12 E18
HAWAII	01	2034	N11 E18
SAC PEAK	01	2035	N12 E18
HUANCAYO	01	2037	N12 E19
USNRL	01	2044	N16 W35
SAC PEAK	01	2050	S09 E32
SAC PEAK	01	2125	S12 W56
HAWAII	01	2126 E	S05 W58
*CAPRI-S	02	0936 E	N13 E08
CAPRI-S	02	1102 E	N16 W39
USNRL	02	1322	N08 W38
USNRL	02	1417	N18 W44
OTTAWA	02	1418	N17 W44
*OTTAWA	02	1446	S16 W23
SAC PEAK	02	1502	S12 W67
SAC PEAK	02	1510	N19 W46
USNRL	02	1512	N18 W44
SAC PEAK	02	1550	N13 W49
SAC PEAK	02	1607	S14 W24
SAC PEAK	02	1705	N19 W46
SAC PEAK	02	1705	S15 W25
USNRL	02	1707	N18 W44
SAC PEAK	02	1715	N09 E19
USNRL	02	1716	N10 E18
USNRL	02	1731	N16 W39
SAC PEAK	02	1732	S15 W26
USNRL	02	1734	S15 W23
*WENDEL	03	0823 E	N16 W56
WENDEL	03	0925 E	N09 E15
WENDEL	03	0927 E	N09 E11
WENDEL	03	0930 E	N16 W50
*WENDEL	03	1111 E	N08 E10
ONDREJOV	03	1150	S10 W80
WENDEL	03	1236 E	N08 E05
ONDREJOV	03	1248	N04 W55
ONDREJOV	03	1256	N16 E85
SAC PEAK	03	1455	S15 W37
SAC PEAK	03	1555	N15 W63
SAC PEAK	03	1735	N15 E85
SAC PEAK	03	1742	S20 W39
SAC PEAK	03	1802	N09 W54
SAC PEAK	03	1850	S12 W85
SAC PEAK	03	1920	N09 E04
SAC PEAK	03	1925	N15 W67
SAC PEAK	03	2016	N10 E04
SAC PEAK	03	2047	N15 E78
SAC PEAK	03	2102	N15 W67
WENDEL	04	1035 E	N08 W04
WENDEL	04	1119 E	N16 E68
CAPRI-S	04	1130	N13 W21
WENDEL	04	1130 E	N14 W36
WENDEL	04	1401 E	S07 W07
SAC PEAK	04	1535 E	N10 W04
SAC PEAK	04	1552	N10 W06
SAC PEAK	04	1608	N10 W04
SAC PEAK	04	1710	N12 W27
SAC PEAK	04	1720	N14 E71
SAC PEAK	04	1752	N25 W15
SAC PEAK	04	1805	S15 W52
SAC PEAK	04	1810	N09 W07
SAC PEAK	04	1955	N15 E66
HAWAII	04	1956	N08 E67
SAC PEAK	04	2005	S14 W47
SAC PEAK	04	2027	S15 W48
HAWAII	04	2028	S10 W50
HAWAII	04	2050	S08 E07
USNRL	04	2051 E	S15 W50
USNRL	04	2051 E	N08 W08
SAC PEAK	04	2052	S05 E08
USNRL	04	2053	S07 E08
MITAKA	05	0439 E	S16 W51
*MEUDON	05	0900	N18 E55
WENDEL	05	1141 E	N09 W15
MEUDON	05	1146	N12 W17
WENDEL	05	1158 E	N16 E55
WENDEL	05	1239 E	S04 E82
MEUDON	05	1246	S20 W70
MEUDON	05	1255	N18 E55
*USNRL	05	1303 E	N16 E57
WENDEL	05	1353 E	N08 W17
OTTAWA	05	1429	N09 W23
OTTAWA	05	1436	N09 W23
SAC PEAK	05	1520	N04 W03
SAC PEAK	05	1615	N08 W20
SAC PEAK	05	1622	S18 W73
SAC PEAK	05	1632	N16 E55
SAC PEAK	05	1747	N07 E90
SAC PEAK	05	1747	N09 W23
SAC PEAK	05	1827	N09 W22
SAC PEAK	05	1827	S16 W69
SAC PEAK	05	1827	N07 E90
SAC PEAK	05	1920	S17 W75
SAC PEAK	05	1935	S15 W70
SAC PEAK	05	1952	N08 W23
SAC PEAK	05	2007	S15 W71
SAC PEAK	05	2045	N16 E52
SAC PEAK	05	2047	N09 W23
USNRL	05	2048	N15 E51
USNRL	05	2050	N09 W23
SAC PEAK	05	2050	S17 W77
SAC PEAK	05	2132	S16 W68
NIZAMIAH	06	0535	N11 E51
UCCLE	06	0957	S20 W90
WENDEL	06	0958 E	S20 W85
USNRL	06	1312	S02 E73
USNRL	06	1348	N08 W35
USNRL	06	1350	S07 E75
USNRL	06	1407	N11 E85
SAC PEAK	06	1547	N08 W27
MCMATH	06	1552 E	N08 W33
*SAC PEAK	06	1612	S17 W79
*MCMATH	06	1613	S19 W83
SAC PEAK	06	1615	S21 W90
MCMATH	06	1639	N29 E65
USNRL	06	1639	N29 E67
MCMATH	06	1710	S02 E73
SAC PEAK	06	1710	S02 E73
SAC PEAK	06	1757	S07 W17
SAC PEAK	06	2125 E	S18 E90
HAWAII	07	0144	S15 W15
MEUDON	07	0818	S20 E87
*WENDEL	07	0825 E	S19 E77
WENDEL	07	0825 E	S03 E62
WENDEL	07	0855 E	S09 W21
WENDEL	07	0907 E	N04 W23
WENDEL	07	1051 E	N16 E32
WENDEL	07	1322 E	N14 W75
WENDEL	07	1348 E	N15 E43
WENDEL	07	1349 E	N10 W44
WENDEL	07	1356 E	N07 W24
WENDEL	07	1418 E	N11 W41
SAC PEAK	07	1522	N15 E26
SAC PEAK	07	1542	S23 W14
SAC PEAK	07	1550	S18 E86
SAC PEAK	07	1610	S00 E49
SAC PEAK	07	1655	S18 E85
SAC PEAK	07	1720	N17 E32
SAC PEAK	07	1722	N29 E54
SAC PEAK	07	1857	N00 E47
SAC PEAK	07	2002	N01 E51
HAWAII	07	2004 E	S03 E49
SAC PEAK	07	2022	N12 E22
HAWAII	07	2024	N10 E26
SAC PEAK	07	2045	S04 E64
SAC PEAK	07	2100	S04 E63
SAC PEAK	07	2107	S21 W15
HAWAII	07	2110	S18 W17
HAWAII	07	2224	S18 W16
WENDEL	08	0958 E	S01 E46
WENDEL	08	1005 E	S20 W28
WENDEL	08	1009 E	S20 W27
WENDEL	08	1032 E	N28 E38
WENDEL	08	1058 E	N07 W60
WENDEL	08	1304 E	S15 E65
WENDEL	08	1316 E	N14 E17
LOCARNO	08	1407	N14 E17
LOCARNO	08	1417	S12 E45
USNRL	08	1734	S08 E47
SAC PEAK	08	1740 E	N16 W90
SAC PEAK	08	1822	N09 W66
SAC PEAK	08	1835	S19 W31
SAC PEAK	08	1937	N14 E12
SAC PEAK	08	1942	S19 W31
USNRL	08	2000	N08 W67
SAC PEAK	08	2040	S00 E35
SAC PEAK	08	2107	N16 W90
HAWAII	08	2112	N24 W90
*MCMATH	09	1352	N28 E24
MCMATH	09	1459	N13 W05
USNRL	09	1459	N14 W05
USNRL	09	1541	N29 E25
MCMATH	09	1543	N28 E26
USNRL	09	1658	S09 E32
SAC PEAK	09	1735	N12 W90
MCMATH	09	1746	S08 E35
*USNRL	09	1805	S09 E01
*USNRL	09	1822	N01 E26
USNRL	09	1922	N10 E37
USNRL	09	1945 E	N11 E35
USNRL	09	2021	N00 E25
USNRL	09	2036	N18 W31
USNRL	09	2047	N14 W08
USNRL	10	1312 E	N29 E12
USNRL	10	1319	S19 E40
USNRL	10	1320	N09 E13
USNRL	10	1346	N08 E11
MCMATH	10	1346 E	S03 E17
USNRL	10	1356	N09 E22
OTTAWA	10	1412	S03 E16
USNRL	10	1522	S02 E14
SAC PEAK	10	1530	S01 E14
USNRL	10	1620	N01 E18
SAC PEAK	10	1637	N09 E62
SAC PEAK	10	1725	S02 E13
SAC PEAK	10	1815	N04 W77
SAC PEAK	10	1830	S01 E16
SAC PEAK	10	1907	S11 W23
USNRL	10	1916 E	N22 E90
SAC PEAK	10	1935	S08 E19
USNRL	10	1937	S07 E19
USNRL	10	2039	S01 E14
USNRL	10	2040	N13 E28
SAC PEAK	10	2112	S02 E10
SAC PEAK	10	2120	N16 W15
SAC PEAK	10	2155	S02 E13
CLIMAX	10	2219	N20 E90
CAPRI-S	11	0820 E	S19 W63
CAPRI-S	11	0820 E	S11 W27
ARCETRI	11	0947	S02 E05
OTTAWA	11	1422	S13 W29
CAPRI-S	11	1427 E	S11 W27
OTTAWA	11	1428	S02 E02
OTTAWA	11	1452	N12 W31
SAC PEAK	11	1545 E	S02 E00
SAC PEAK	11	1615	S15 W31
OTTAWA	11	1628 E	S21 W27
SAC PEAK	11	1640	S02 E10
SAC PEAK	11	1705	S02 E00
OTTAWA	11	1708	S02 W00
SAC PEAK	11	1712	S12 W32
SAC PEAK	11	1740	S07 W88
*SAC PEAK	11	1755	N00 W02
SAC PEAK	11	1842	S03 W90
SAC PEAK	11	1850	S02 W02
ARCETRI	12	0842 E	S18 E15
*STOCKHOLM	12	1048 E	S04 W10
*CAPRI-S	12	1050 E	S02 W08
*STOCKHOLM	12	1234 E	S03 W09
*USNRL	12	1359 E	S03 W08
USNRL	12	1422	S17 E10
*USNRL	12	1453	S02 W14
MCMATH	12	1455 E	N23 E64
USNRL	12	1456	N22 E63
*MCMATH	12	1500	S02 W14
*SAC PEAK	12	1504 E	S01 W14
USNRL	12	1550	N22 E63
SAC PEAK	12	1602	S02 W13
MCMATH	12	1607	S02 W12
USNRL	12	1649 E	S02 W11
SAC PEAK	12	1650	S02 W13
MCMATH	12	1651	S02 W12
HUANCAYO	12	1651	S00 W08
USNRL	12	1710 E	N22 E63
USNRL	12	1710	N00 W13
USNRL	12	1714	N22 E63
MCMATH	12	1715	N22 E62
USNRL	12	1745	S04 W14
USNRL	12	1745	N16 W40
MCMATH	12	1745	N16 W41
SAC PEAK	12	1830	S16 E09
MCMATH	12	1830	S16 E10
USNRL	12	1831	S17 E09
SAC PEAK	12	1847	S16 E06
USNRL	12	1907	N23 E57
HAWAII	12	1908	N18 E61
USNRL	12	1933	S13 W22
USNRL	12	1954	S03 W14
SAC PEAK	12	2015	S02 W10
USNRL	12	2016	S02 W15
USNRL	12	2018	S18 E05
SAC PEAK	12	2122	S00 W12
HAWAII	12	2200 E	S00 W17
*MITAKA	13	0157	S03 W11
USNRL	13	1337	S08 W22
MCMATH	13	1424	N13 W12
SAC PEAK	13	1505	N23 E48
SAC PEAK	13	1540	S02 W17
USNRL	13	1542	S03 W18
SAC PEAK	13	1545	N22 E47
USNRL	13	1547	N22 E47
MCMATH	13	1550 E	N22 E48
SAC PEAK	13	1552	S06 W24
USNRL	13	1553	S08 W24
USNRL	13	1553	S20 W08
SAC PEAK	13	1637	N13 W12
USNRL	13	1638	N12 W12
MCMATH	13	1639	N11 W00
USNRL	13	1645	N17 E80
SAC PEAK	13	1700	S18 W07
SAC PEAK	13	1700	N17 E86
SAC PEAK	13	1700	N23 E46
MCMATH	13	1701	S19 W07
USNRL	13	1705 E	N23 E43
USNRL	13	1705 E	S20 W07
USNRL	13	1710 E	N18 E85
SAC PEAK	13	1722	N10 E22
SAC PEAK	13	1742	S03 W29
SAC PEAK	13	1755	N02 W27
SAC PEAK	13	1755	S19 W08
SAC PEAK	13	1820	S02 W22
SAC PEAK	13	2010	N01 W28
HAWAII	13	2010	N02 W28
SAC PEAK	13	2107	N02 W27
SAC PEAK	13	2132	S03 W27
HAWAII	13	2134	N00 W27
*SAC PEAK	13	2200	N02 W28
UCCLE	14	1416 E	N25 E38
SAC PEAK	14	1520	N00 W37
SAC PEAK	14	1525	N26 E41
SAC PEAK	14	1537	S02 W37
SAC PEAK	14	1552	S01 W29
SAC PEAK	14	1602	S02 W39
SAC PEAK	14	1612	N23 E34
SAC PEAK	14	1632	N00 W37
SAC PEAK	14	1805	N28 W47
SAC PEAK	14	1817	S04 W41
SAC PEAK	14	1847	N12 W65
SAC PEAK	14	2022	S16 W24
SAC PEAK	14	2047	N22 E31
SAC PEAK	14	2112	N23 E23
SAC PEAK	14	2147	N22 E33
HAWAII	14	2342	S02 W47
HAWAII	14	2354	S13 W24
WENDEL	15	0859 E	N23 E26
*SAC PEAK	15	1502 E	S07 W50
*SAC PEAK	15	1502 E	N25 E16
SAC PEAK	15	1535	S04 W49
USNRL	15	1535	S06 W55
HUANCAYO	15	1537	S04 W54
USNRL	15	1550	S16 W31
SAC PEAK	15	1627	N22 E11
USNRL	15	1628	N23 E12
SAC PEAK	15	1650	N23 E11
SAC PEAK	15	1730	N22 E11
USNRL	15	1735	N12 E12
USNRL	15	1812	S07 W52
SAC PEAK	15	1827	N25 E11
SAC PEAK	15	1902	N21 E11
USNRL	15	1904	N20 E10
USNRL	15	1906	N27 W61
*HAWAII	15	2014	N24 E13
SAC PEAK	15	2112	N25 E09
SAC PEAK	15	2122	N23 E11
SAC PEAK	15	2142	S07 W52
*HAWAII	15	2204	N24 E13
SAC PEAK	15	2217 E	S12 E67
HAWAII	15	2224	N24 E13
WENDEL	16	0836 E	N10 W56
WENDEL	16	0916 E	S08 W58
WENDEL	16	0928 E	N21 E04
*WENDEL	16	1031 E	N21 E03
WENDEL	16	1219 E	S03 W67
WENDEL	16	1222 E	N24 E03
*MCMATH	16	1344 E	S08 W64
USNRL	16	1414	S15 E67
USNRL	16	1508	S19 W17
*SAC PEAK	16	1515	S06 W63
USNRL	16	1546	S15 E67
SAC PEAK	16	1612	S06 W65
USNRL	16	1615	S07 W63
*SAC PEAK	16	1630	S15 E67
SAC PEAK	16	1700	S08 W62
SAC PEAK	16	1707	N08 W22
USNRL	16	1710	N08 W22
SAC PEAK	16	1902	N20 E07
SAC PEAK	16	1930	N09 W23
USNRL	16	1933	N08 W24
SAC PEAK	16	1955	S15 E65
SAC PEAK	16	2010	S16 W47
SAC PEAK	16	2027	S02 W72
USNRL	16	2027	S02 W70
SAC PEAK	16	2042	S15 E65
SAC PEAK	16	2105	S06 W63
SAC PEAK	16	2152	N09 W23

SUBFLARES

Noted as follows: Date-Universal Time-Coordinates

DECEMBER 1958

WENDEL	17	1011 E	N06 W28
*USNRL	17	1259 E	S07 W77
USNRL	17	1326	N05 W31
SAC PEAK	17	1512	N17 W07
SAC PEAK	17	1525	S07 W80
SAC PEAK	17	1632	N06 W33
USNRL	17	1633	N05 W32
SAC PEAK	17	1635	S16 W60
SAC PEAK	17	1720	S06 W82
SAC PEAK	17	1850	S06 W82
SAC PEAK	17	1957	S06 W82
SAC PEAK	17	2120	S13 E48
SAC PEAK	17	2130	N25 W15
WENDEL	18	0943 E	N21 W13
WENDEL	18	1022 E	N24 W15
USNRL	18	1400	S07 W90
USNRL	18	1428	N22 W17
SAC PEAK	18	1530	N06 W45
SAC PEAK	18	1700	S01 W90
USNRL	18	1705	S01 W90
SAC PEAK	18	2032	S06 W90
CLIMAX	18	2035	S03 W90
SAC PEAK	18	2102	S15 E41
USNRL	19	1644	S23 E70
SAC PEAK	20	1656	N13 E61
SAC PEAK	20	1929	N23 W46
WENDEL	21	1037 E	S15 E75
HAWAII	21	2000	S18 E80
HAWAII	22	0112 E	S25 E41
NIZAMIAH	22	0926 E	S12 E61
UCCLE	22	1409	S17 E65
USNRL	22	1440	S15 E62
USNRL	22	1732	S18 W13
MCMATH	22	1736	N21 W88
SAC PEAK	22	2025	S22 E67
USNRL	22	2025	S21 E66
USNRL	23	1457 E	N06 E90
SAC PEAK	23	1635	N06 E90
SAC PEAK	23	1650	S18 W24
SAC PEAK	23	1803	N06 E90
USNRL	23	1812	N06 E90
SAC PEAK	23	1828	S14 E69
SAC PEAK	23	1848	S15 W31
SAC PEAK	23	1928	S13 E67
SAC PEAK	23	2107	N33 E44
SAC PEAK	23	2137	N17 E70
SAC PEAK	23	2155	S15 E50
*SAC PEAK	23	2202	S15 E67
USNRL	24	1505	N11 E53
*SAC PEAK	24	1542 E	N17 E63
SAC PEAK	24	1600	N06 E83
USNRL	24	1607	N07 E88
USNRL	24	1722	S15 E35
USNRL	24	1906	S24 E01
SAC PEAK	24	1950 U	S23 E01
USNRL	24	1954 E	S23 E10
SAC PEAK	24	2035	S18 E37
SAC PEAK	24	2052 U	N27 E35
SAC PEAK	24	2110	S16 E47
SAC PEAK	24	2135	N07 E71
HAWAII	24	2138	N06 E72
SAC PEAK	24	2152	N06 E80
NIZAMIAH	25	0549	N04 E74
USNRL	25	1407 E	N08 W41
USNRL	25	1430	N15 E52
OTTAWA	25	1439	S15 E28
USNRL	25	1439	S15 E28
OTTAWA	25	1450	S14 E43
SAC PEAK	25	1540	N06 E58
USNRL	25	1543 E	N08 E60
SAC PEAK	25	1550	N09 W45
USNRL	25	1555 E	N08 W45
*SAC PEAK	25	1632	S15 E30
USNRL	25	1649	S14 E50
SAC PEAK	25	1837	S16 E26
SAC PEAK	25	2200	N08 W05
USNRL	26	1316	N08 E55
USNRL	26	1326	N07 E55
USNRL	26	1349	S20 E30
USNRL	26	1414	N21 E40
USNRL	26	1417	N09 E54
USNRL	26	1419	N07 E55
USNRL	26	1453	N07 E55
MCMATH	26	1505 E	N07 E58
USNRL	26	1606	N08 E55
SAC PEAK	26	1720	N17 E30
MCMATH	26	1721	S15 E09
SAC PEAK	26	1722	S14 E08
SAC PEAK	26	1727	S17 E23
SAC PEAK	26	1800	S14 E09
MCMATH	26	1802	N26 W09
MCMATH	26	1854	N15 E53
SAC PEAK	26	1935	N06 E46
SAC PEAK	26	1950	N14 E23
SAC PEAK	26	2045	N05 E52
HAWAII	26	2100	N03 E54
WENDEL	27	0855 E	N09 W22
*WENDEL	27	0856 E	S13 E03
*WENDEL	27	0856 E	S15 E10
CAPRI-S	27	0956 E	S19 E06
USNRL	27	1321	N08 W27
USNRL	27	1413	S22 W01
USNRL	27	1505	N11 W25
SAC PEAK	27	1508 E	N12 W27
SAC PEAK	27	1525	S15 W06
USNRL	27	1529 E	S15 W03
SAC PEAK	27	1542	N07 E43
USNRL	27	1543	N07 E42
SAC PEAK	27	1552	N21 E37
USNRL	27	1609 E	N19 E37
USNRL	27	1613	N18 E30
USNRL	27	1638	N16 E21
SAC PEAK	27	1727	N11 W29
SAC PEAK	27	1745	N06 E41
SAC PEAK	27	1852	N06 E41
SAC PEAK	27	2010	S15 W07
HAWAII	27	2018	S15 W08
SAC PEAK	27	2030	N18 E32
SAC PEAK	27	2102	N18 E32
SAC PEAK	27	2102	N07 E39
HAWAII	27	2106	N06 E41
SAC PEAK	27	2125	N15 E13
SAC PEAK	27	2130	N07 E41
SAC PEAK	27	2200	N15 E13
SAC PEAK	27	2205	N18 E32
HAWAII	28	0044	N07 E40
SAC PEAK	28	1512 E	N09 W44
MCMATH	28	1600	N12 W09
SAC PEAK	28	1607	N12 W04
SAC PEAK	28	1617	S11 W13
MCMATH	28	1618	S12 W15
SAC PEAK	28	1620	S14 W20
MCMATH	28	1645	S23 W50
SAC PEAK	28	1645	S23 W50
SAC PEAK	28	1650	N12 W05
MCMATH	28	1654	N12 W09
*SAC PEAK	28	1712	S13 W22
SAC PEAK	28	1722	N09 W45
MCMATH	28	1724	N08 W96
MCMATH	[illegible]	175[illegible]	[illegible] W1[illegible]
SAC PEAK	28	1840	N22 [illegible]
*SAC PEAK	28	1855	N13 W06
SAC PEAK	28	1957	N19 E86
SAC PEAK	28	2[illegible]	N12 W06
SAC PEAK	28	211[illegible]	N12 W07
SAC PEAK	28	222[illegible]	S21 W05
CAPRI-S	29	0925 E	N17 E10
UCCLE	29	0953	N18 E11
*CAPRI-S	29	1038 E	N06 E17
MCMATH	29	1550 E	N11 W15
MCMATH	29	1553	[illegible] W60
MCMATH	29	1624	N14 W11
MCMATH	29	1635	N09 W61
MCMATH	29	1726	N06 W14
MCMATH	29	1755	N08 E09
MCMATH	29	1803	S13 W23
MCMATH	29	1840 E	N15 W16
*CAPRI-[illegible]	30	1043 E	[illegible]18 W35
*CAPRI-S	30	1113 E	S12 W23
USNRL	30	1317	N24 E61
ARCETRI	30	1348 E	N27 E60
USNRL	30	1445	N17 W49
USNRL	30	1514	S14 W39
MCMATH	30	1514 E	S12 W40
SAC PEAK	30	1515 E	S12 W40
MCMATH	30	1541 E	S12 W40
*SAC PEAK	30	1542	N11 W67
*MCMATH	30	1543	N10 W66
MCMATH	30	1632	N17 W52
MCMATH	30	1634	S12 W4[illegible]
SAC PEAK	30	1637	N17 W49
SAC PEAK	30	16[illegible]	S13 W40
OTTAWA	30	1654 E	S13 W39
MCMATH	30	1661 E	[illegible] W4[illegible]
MCMATH	30	1730	[illegible]17 W40
USNRL	30	1744	S15 W40
SAC PEAK	30	1750	S13 W41
USNRL	30	1805 E	S16 W41
MCMATH	30	1900	N17 W52
USNRL	30	1906	S13 W42
MCMATH	30	1915	S12 W42
USNRL	30	1940	S13 W43
USNRL	30	2[illegible]37	N16 W30
USNRL	30	2054	N10 W63
WENDEL	31	0957 E	[illegible]17 E48
*CAPRI-S	31	1000	N17 W33
WENDEL	31	1306 E	N17 W39
WENDEL	31	1310 E	S14 W50
*CAPRI-[illegible]	31	1316	S21 W50
SAC PEAK	31	1552	N22 E47
USNRL	31	1553	N24 E46
SAC PEAK	31	1627	N22 E4[illegible]
*SAC PEAK	31	1725	S13 W55
*USNRL	31	1726	S14 W56
SAC PEAK	31	1815	N16 W42
HAWAII	31	1832	S25 W42
SAC PEAK	31	1927	N19 W65
USNRL	31	1928	N18 W65
SAC PEAK	31	1940	N16 W23
SAC PEAK	31	1950	N14 W26
USNRL	31	1951	N14 W27
HAWAII	31	1954 E	N14 W26
SAC PEAK	31	2010	N10 W12
USNRL	31	2012	N09 W11
SAC PEAK	31	2020	S11 W57

*Rated as flare of importance ≥ 1 by other observatories (see CRPL-F 173 Part B).

SOLAR FLARES

SEPTEMBER 1958

OBSERVATORY	DATE SEPT 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
SYDNEY	01	0029	0049	0034	N12	W70	4715	20	1	2	0034	1.00	3.00			
SYDNEY	01	0036	0118	0100	S05	W15	4722	42	1	2	0100	3.00	3.00			
MT WILSON	01	0048	0108	0052	S08	W10	4722	20	1							
TASHKENT	01	0354	0405	0357	S08	E04	4722	9	1	3	0357		2.00	4.00	105	
KHARKOV	01	1031 E	1043		N11	E57	4738	12 D	1	3	1033		8.70	1.50		
GOOD HOPE	01	1150	1202		N10	W90	4715	12	1		1155	.20				
GOOD HOPE	01	1224	1334	1245	S07	W20	4722	70	1		1245	2.30	2.50			
KIEV	01	1239	1331	1255	S05	W18	4722	52	1+	2	1254		4.85		86	
KHARKOV	01	1240	1320	1255	S04	W19	4722	40	1	3	1243		3.10	2.00		
CAPRI-G	01	1302 E	1324 D		S06	W17	4722	22 D	1+	2			4.00			
MT WILSON	01	1819	1837	1825	S15	E90	4739	18	1							
VOROSHILOV	01	2342	0011	2344	N12	W19	4725	29	1+	2	2344		2.11		90	
SYDNEY	02	0240	0249	0246	N11	W79	4715	9	1	2	0246	.50	2.00			
ALMA-ATA	02	0208 E	0458	0403	N13	W23	4725	175 D	1	2	0403		4.20		73	
ALMA-ATA	02	0359	0440	0404	N14	W19	4725	41	1	2	0404		2.70		66	
GOOD HOPE	02	0925	0945	0936	N16	W88	4715	20	1+		0936	.40	11.50			
GOOD HOPE	02	1026	1115	1048	S17	E80	4741	49	1+		1048	2.00	11.50			S-SWF
CAPRI-G	02	1343	1356		S16	E76	4741	13	1	3			4.00			
HUANCAYO	02	1530 E	1628	1558	S14	E75	4741	58 D	1+	2	1602	2.40	11.50	2.70		
HUANCAYO	02	1933 E	1939 D	1933	S13	W29	4722	6 D	1	2	1933			2.50		
MT WILSON	02	1957	2036 D	2006	N14	W32	4725	39 D	1							
MT WILSON	02	2104	2141	2104	S10	E85	4741	37	1+							S-SWF
VOROSHILOV	02	2209	2218	2212	N20	E90	4743	9	1+	3	2212		4.95		104	
KRASNYA	03	0814	0830	0816	S12	E70	4741	16	1	1	0816		1.10		105	
CAPRI-G	03	0815 E	0827		S16	E68	4741	13 D	1	3			3.00			
KRASNYA	03	0833	0845	0837	S04	E78	4741	12	1	1	0837		2.40		65	
CAPRI-G	03	0846 E	0859		S08	E78	4741	13 D	1	2			4.00			
CAPRI-G	03	1205	1226		N27	W39	4726	21	1	1			3.00			
CAPRI-G	03	1515 E	1535 D		S05	W44	4722	20 D	1	1			4.00			
HUANCAYO	03	1934 E	2008	1937	S08	E67	4741	34 D	1+	2	1937	2.00	6.20	3.00		Slow S-SWF
HUANCAYO	03	1943 E	2008	1950	N18	W40	4725	25 D	1	2	1950	3.10	4.00	2.70		
ABASTUMANI	04	0505	0520	0510	N20	E86	4743	15	1	1	0510		20.00			
ALMA-ATA	04	0505 E	0525	0511	N19	E80	4743	20 D	2	3	0511		8.30		88	
TASHKENT	04	0506	0535	0508	N21	E81	4743	29	1+	3	0510		3.00	6.70	165	S-SWF
CAPRI-G	04	0520 E	0547		N17	E70	4743	27 D	1	3			5.00			
TASHKENT	04	0504	0545	0524	S06	E63	4741	41	1	3	0525		3.00	3.40	115	
ABASTUMANI	04	0505 E	0537 D	0524	S06	E63	4741	32 D	1+		0524		7.00			
ALMA-ATA	04	0511	0544	0523	S08	E61	4741	33	3	3	0523		34.40		81	
CAPRI-G	04	0520 E	0532		S08	E64	4741	12 D	1	3			5.00			
GOOD HOPE	04	0852	0902	0855	N16	E70	4743	10	1		0855	.80	2.30			
KIEV	04	1116	1239	1121	N28	W66	4721	83	1	3	1120		3.98		70	
CAPRI-G	04	1406	1455		S11	W54	4722	49	2	1			8.00			S-SWF
MT WILSON	04	2001	2106	2007	W48	S10	4722	65	1+							
MT WILSON	04	2353	2408	2358	W58	S10	4722	15	1							
SYDNEY	05	0133	0201 D	0138	S04	E50	4741	23 D	2	2	0138	4.00	6.00			
TASHKENT	05	0435	0513	0452	S06	E48	4741	38	1	3	0452		7.00	3.00	110	
SYDNEY	05	0437	0520 D	0454	S07	E47	4741	43 D	1	1	0454	2.00	3.00			
SCHAUINS	05	0628 E	0635		S07	E45	4741	7 D	1	2			4.00			
CAPRI-G	05	0630 E	0635 D		S10	E46	4741	5 D	1	1			5.00			

SOLAR FLARES

SEPTEMBER 1958

OBSERVATORY	DATE SEPT 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
CAPRI-G	05	0657	0712		S12	E46	4741	75	1	2			3.00			
CAPRI-G	05	1355	1421		S10	E52	4741	26 D	1+	2			5.00			
KIEV	05	1359 E	1423 D	1407 U	S10	E55	4741	24 D	1	2	1407		3.13		65	Slow S-SWF
SCHAUINS	06	0918 E	0930		S11	E90	4750	12 D	1	3						
CAPRI-G	06	1106	1121		S07	E30	4741	15	1	3			4.00			
KIEV	06	1200 E	1226	1202 U	N18	E85	4743	26 D	1	2	1201		3.96		62	
KIEV	06	1258	1334	1319	S05	W90	4722	36	1	2	1319				66	
SCHAUINS	06	1323 E	1340		S08	E27	4741	17 D	1	2			3.00	1.80		
ABASTUMANI	07	0638 E	0759 D	0720 U	S08	W85	4745	81 D	1	2	0713		5.00	3.50	60	S-SWF
CAPRI-G	07	1130	1146		N23	E70	4744	16	1	3			3.00			
CAPRI-G	07	1443	1513		N23	E67	4744	30	2	3			7.00			S-SWF
CAPRI-G	07	1455	1520 D		S06	E25	4741	25 D	1+	3			5.00			
MT WILSON	07	1703 E	1709 D	1703	S30	E18	4739	6 D	2							S-SWF
CAPRI-G	08	0540 E	0555		N23	E58	4744	15 D	1	3			4.00			
CAPRI-G	08	0702	0713		S18	W28	4739	11	1	3			3.00			
KRASNYA	08	0830	0841	0831	N21	E89	4748	11	1	1	0831		3.20		60	
KRASNYA	08	0940	1001	0953	S12	E88	4750	21	1+	1	0956		10.40		80	S-SWF
CAPRI-G	08	0944	1007		S15	E90	4750	23	1	1						
KIEV	08	1148	1158	1150	S19	E03	4739	10	1	3	1149		2.46		72	
KIEV	08	1321	1333	1324	S08	E80	4750	12	1+	3	1324		5.95		74	
CAPRI-G	08	1321	1348		S09	E70	4750	27 D	1	3			3.00			
GOOD HOPE	08	1322	1335	1324	S09	E72	4750	13	1		1124	1.00	3.90			
CAPRI-G	08	1331	1346		S16	E04	4739	15	1	3			3.00			
CAPRI-G	08	1336	1350		S17	W11	4739	14	1	3			3.00			
CAPRI-G	08	1428	1450		N22	E61	4744	32	1	3			5.00			
SYDNEY	09	0519	0530 D		S05	W04	4741	11 D	1	1	0530	4.00	5.00			
CAPRI-G	09	0522 E	0539		S07	W07	4741	17	1	3			5.00			
CAPRI-G	09	1037	1206		N16	E02	4743	89	1	3			5.00			
SCHAUINS	09	1051 E	1255 D		N16	E02	4743	124 D	1	1			4.00	1.60		
CAPRI-G	09	1146	1157		N21	E40	4744	11	1	3			3.00			
CAPRI-G	09	1209	1226		N35	E90	4756	17	1	3						
KIEV	09	1212 E	1225 D	1216 U	S10	W04	4741	13 D	1	2	1216		3.10		66	
CAPRI-G	09	1216	1242		S12	W06	4741	26	1	3			3.00			
CAPRI-G	09	1346	1410		N21	E39	4744	24	1	3			2.00			
KIEV	09	1346	1438	1404	S14	W18	4739	52	1+	2	1404		9.10		62	
CAPRI-G	09	1355	1418		S14	W16	4739	23	1+	3			6.00			
CAPRI-G	09	1515	1522 D		N22	E37	4744	7 D	1	3			3.00			
VOROSHILOV	09	2215 E	2255		S12	W16	4739	40 D	1	2	2223		4.06		70	
VOROSHILOV	09	2309	2312	2310	S27	E90	4752	3	1+	2	2310		6.18		67	
SYDNEY	09	2336	2345	2341	S35	E85	4752	9	□	2	2341	.50				
VOROSHILOV	09	2321 E	0145	0010	S12	W02	4741	84 D	2	2	0010		6.90		91	
SYDNEY	09	2347	0125	0008	S12	W10	4741	98	3	1	0008	13.00	14.00			
VOROSHILOV	10	0027	0058	0033	S33	E90	4755	31	1	2	0033		2.52		64	Slow S-SWF
SYDNEY	10	0350	0403 D	0353	S06	W17	4741	13 D	1	2	0353	3.00	3.00			
TASHKENT	10	0353	0403	0355	S07	W23	4741	10	1	3	0356		4.00	2.60	90	
TASHKENT	10	0353	0401	0354	N21	E32	4744	8	1	3	0354		1.00		80	
SIMEIZ	10	0600 E	0607 D	0602 U	N20	E32	4744	7 D	1+	1	0602		2.60	5.10	68	
CAPRI-G	10	0603	0618 D		N21	E31	4744	15 D	1+	3			5.00			

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KHARKOV	10	0604 E			N22	E30	4744		1+	3	0604		5.90			
CAPRI-G	10	0630 E			S18	W18	4739		1	3			4.00			
KHARKOV	10	0853 E	0925		N18	E87	4756	42 D	1+	2	0856		5.70	2.60		
GOOD HOPE	10	1004	1050	1015	S09	W26	4741	46	1		1015	2.00	2.30			
KHARKOV	10	1015	1035	1020	S10	W26	4741	20	1	3	1018		4.10	1.90		S-SWF
CAPRI-G	10	1019 E			S08	W24	4741		1	1			3.00			
CAPRI-G	10	1100 E	1118		N10	E10	4751	18 D	1	1			3.00			
VOROSHILOV	10	2239	2245	2242	S10	W35	4739	6	2	2	2242		8.60		135	
VOROSHILOV	10	2252	2256	2253	N18	E90	4756	4	1+	1	2253		4.95		108	
VOROSHILOV	10	2334	2342	2336	S34	E70	4755	8	1+	2	2336		2.21		144	
VOROSHILOV	11	0013	0031	0021	S33	E70	4755	18	2	2	0021		5.80		96	
VOROSHILOV	11	0149	0157	0153	S35	E70	4755	8	2	2	0153		8.70		109	
TASHKENT	11	0402	0424	0407	S32	E78	4755	22	1	3	0408		11.00	1.70	55	
TASHKENT	11	0402	0435	0410	S13	W38	4739	33	1	3	0411		9.00	1.80	90	
SYDNEY	11	0405	0417 D		S15	W43	4739	12 D	1	1	0415	2.00	3.00			
TASHKENT	11	0508	0547	0510	S12	W40	4739	39	1	3	0512		7.00	2.20	70	
TASHKENT	11	0513	0556	0517	N14	E47	4748	43	1	3	0518		3.00	1.70	65	
TASHKENT	11	0535	0605	0540	S12	E85	4757	30	1	3	0542		5.00	2.40	65	
CAPRI-G	11	0630 E	0645 D		S08	W39	4739	15 D	1+	3			6.00			
SCHAUINS	11	0640 E	0705		S08	W38	4739	25 D	1+	2			5.00	2.40		
SIMEIZ	11	0641	0654	0643	S09	W41	4739	13	1+	2	0644		4.10	3.10	76	
GOOD HOPE	11	0644 E	0705		S08	W40	4739	21 D	1		0645	1.80	2.40			
SIMEIZ	11	0845	0856	0846	N17	E85	4756	11	1+	2	0846		6.60	2.80	76	
SCHAUINS	11	0849 E	0857		S12	E80	4757	62 D	1+	2			2.00	2.10		
GOOD HOPE	11	0852	0945	0916	S11	E40	4750	53	1		0916	2.00	2.70			
CAPRI-G	11	0855 E	0911 D		S09	W37	4739	16 D	1	1			5.00			
CAPRI-G	11	0933 E			N20	W19	4743		1	1			4.00			
SCHAUINS	11	0943 E	0951 D		N18	W18	4743	14 D	1	2			3.00	1.70		
GOOD HOPE	11	1115	1123	1115	N13	E85	4756	8	1		1115	.60	6.90			
CAPRI-G	11	1116 E	1127		N15	E85	4756	11 D	1	2			4.00			
GOOD HOPE	11	1213	1315 D	1218	S08	W42	4739	62	1		1218	2.50	3.50			
KIEV	11	1216 E	1238 D	1226 U	N20	W21	4743	22	1	2	1226		2.09		78	
KIEV	11	1216 E	1312	1228 U	S09	W45	4739	56 D	1	2	1227		1.32		63	
SCHAUINS	11	1243 E	1248 D		S09	W40	4739	5 D	1+	2			4.00	1.70		
VOROSHILOV	11	2231 E	2238 D		S19	E52	4752	7 D	1	2	2231		2.13		59	
SYDNEY	11	2321 E	2331	2328	S38	E60	4755	10 D	1	2	2328	1.00	3.00			
VOROSHILOV	11	2326 E	2330 D		S34	E68	4755	4 D	1+	2	2326		3.28		102	
SYDNEY	11	2323	2335	2327	N22	E15	4744	12	1	2	2327	2.00	2.00			
VOROSHILOV	11	2326 E	2334 D		N20	E13	4744	8 D	1	2	2326		3.31		71	
VOROSHILOV	11	2326 E	2355 D		N05	W55	4740	29 D	1	2	2326		2.09		69	
VOROSHILOV	12	0016 E	0039 D	0025	S12	W46	4739	23 D	1	2						
ALMA-ATA	12	0305 E	0427 D	0328	S37	E65	4755	82 D	1+	2	0328		5.40		64	
ALMA-ATA	12	0354	0410	0400	S10	W53	4739	16	1	2	0400		4.00		76	
ABASTUMANI	12	0515 E	0952	0915 U	S14	W52	4739	37 D	1		0825		5.00	2.80	68	
GOOD HOPE	12	0655	0740	0704	S15	E67	4759	45	2		0704	3.50	10.20			
ABASTUMANI	12	0656	0740	0702	S14	E66	4759	44	2-		0706		22.00	3.20	80	
SIMEIZ	12	0657	0701 D	0701	S13	E70	4757	4 D	2	2	0700		12.00	3.80	72	
SCHAUINS	12	0702 E	0738 D		S13	E67	4757	36 D	2	2			6.00	4.10		S-SWF
CAPRI-G	12	0705 E	0712 D		S13	E73	4757	7 D	1+	2			6.00			
GOOD HOPE	12	0813	0845	0820	S18	W49	4739	32	1		0820	1.50	2.40			Slow S-SWF
SCHAUINS	12	0835 E	0845 D		S17	W51	4739	10 D	1+	2			2.00	2.30		

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GOOD HOPE	12	0820	0830	0826	N10	E78	4756	10	1		0826	.90	5.20			
ABASTUMANI	12	0848	0902	0855	N20	E05	4744	14	1		0856		1.20	2.90	73	
GOOD HOPE	12	0904	0955	0918	N14	E67	4756	51	2		0918	3.50	8.30			S-SWF
ABASTUMANI	12	0907	0952	0919	N12	E68	4756	45	2				10.00		98	
GOOD HOPE	12	0912	0945	0917	S08	W49	4741	33	1		0917	1.50	2.30			
CAPRI-G	12	0912	0949		N16	E66	4756	37	1+	3			5.00			
SCHAUINS	12	0919 E	0956		N16	E63	4756	37 D	2	2			6.00	4.70		
GOOD HOPE	12	1037	1120	1042	S38	E60	4755	43	1		1042	1.20	3.50			
CAPRI-G	12	1046	1102 D		S35	E58	4755	16 D	1	3			4.00			
GOOD HOPE	12	1311	1315 D		S18	W60	4739	4 D	1		1315	1.10	2.30			
CAPRI-G	12	1355 E	1416		S09	E28	4752	21 D	1	1			3.00			
MT WILSON	12	1728 E	1741 D	1728	S31	E54	4755	13 D	1							Slow S-SWF
TASHKENT	13	0356 E	0401 D		N16	E63	4756	5 D	1	2	0356		3.00	2.50	55	
ABASTUMANI	13	0502 E	0550	0513	S17	E67	4759	48 D	1	3	0513		4.00	3.00	63	
ABASTUMANI	13	0503 E	0823 D	0608 U	S29	E42	4755	200 D	1		0609		2.00	2.40	80	
ABASTUMANI	13	0522 E	0612	0543 U	S08	E18	4750	38 D	1				1.00		70	
ABASTUMANI	13	0547	0621 D	0550 U	S15	W63	4739	34 D	1		0552		5.00	3.70	98	
ABASTUMANI	13	0559	0656	0606	S22	E65	4759	57	1	3			12.00		74	
TASHKENT	13	0602	0615 D	0609	S22	E63	4759	13 D	1	2	0608		6.00	1.70	55	
CAPRI-G	13	0610 E	0629		S20	E62	4759	19 D	1	1			4.00			
SCHAUINS	13	0851 E	0905		S17	E59	4759	14 D	1	3			3.00	1.30		
NEDERHORST	13	0915	1015 D		S08	W65	4741	60 D	2+	2						
KHARKOV	13	0917 E	0951		S12	W50	4741	34 D	1+	2	0919		8.00	1.70		Slow S-SWF
KHARKOV	13	0917 E	0951		S12	W59	4741	34 D	1+	2	0919		8.60	1.70		
SCHAUINS	13	0919 E	0951		S10	W61	4741	32 D	2	3			8.00	2.40		
CAPRI-G	13	1006	1050		S32	E36	4755	44	1+	1			5.00			
GOOD HOPE	13	1018 E	1217 D		S33	E37	4755	119 D	1		1018	2.20	3.50			
KHARKOV	13	1025 E	1154 D		S27	E37	4755	89 D	1+	2	1027		6.80	1.70		
KHARKOV	13	1040	1150		S28	E42	4755	70	1	2	1044		3.90	1.70		
KIEV	13	1116 E	1224 D	1117 U	S30	E34	4755	68 D	1	2	1117		2.37		55	
KIEV*	13	1045 E	1134 D		S21	E37	4759	49 D	1	1			8.20			
KIEV	13	1344 E	1400	1344 U	S12	E50	4757	16 D	1	2	1344		2.45		50	
MT WILSON	13	1937	1955	1945	S16	E58	4759	18	1							
MT WILSON	13	2229	2254	2236	N20	E85	4756	25	1							
VOROSHILOV	14	0022	0037		S08	E16	4750	15	1+	1	0030		2.13		93	
SYDNEY	14	0222	0225	0223	S19	W87	4739	3	□	2	0223	.50				
SYDNEY	14	0359	0400 D		S14	W86	4739	1 E	□	2	0400	.50				
TASHKENT	14	0451	0518	0504	N16	E37	4756	27	1	2	0506		2.00	2.00	45	
CAPRI-G	14	0630	0643		S10	E04	4750	13	1	2			3.00			
SCHAUINS	14	0655 E	0708 D		S10	E03	4750	8 D	1	3			3.00	1.70		
GOOD HOPE	14	0822	0929 D	0905 U	S10	W80	4741	67 D	2		0835	1.90	10.90			
SIMEIZ	14	0830 E	0859 D	0859 U	S10	W85	4741	29 D	3	1	0835		20.00	6.40	92	
SCHAUINS	14	0832 E	0950		S10	W75	4741	78 D	2	3			8.00	5.70		S-SWF
CAPRI-G	14	0835 E	0855		S12	W85	4741	20 D	1	1			4.00			
KHARKOV	14	0859 E	0939		S13	W80	4741	40 D	2+	2	0903		13.70	4.40		
CAPRI-G	14	0922	1030		S12	W90	4741	68	1+	1						
GOOD HOPE	14	1016	1017 D		S18	E68	4765	1 D	1		1017	.70	2.30			
GOOD HOPE	14	1217	1230	1223	S18	E68	4765	13	1		1223	1.00	3.20			
KIEV	14	1218 E	1345 D	1223 U	S16	E69	4765	87 D	1	3	1223		2.00		58	
CAPRI-G	14	1234 E	1250 D		S10	W01	4750	16 D	1	1			3.00			
SYDNEY	15	0422	0434	0427	S16	E56	4765	12	1	1	0427	1.00	2.00			

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SYDNEY	15	0427	0453 D	0436	S22	E52	4765	26 D	2	1	0436	4.00	8.00			
SYDNEY	15	0434	0440	0436	N10	W78	4743	6	1	2	0436	.50	2.00			
ABASTUMANI	15	0623	0654	0627	N16	E23	4756	31	1		0627		2.50		58	
SIMEIZ	15	0625 E	0653 D	0638 U	N14	E29	4756	28 D	1	2	0635		4.50	2.20	60	
ABASTUMANI	15	0653 E	0809 D	0658	S17	E55	4765	76 D	1	2	0658		2.00		73	
SCHAUINS	15	0940 E	1035 D	1006	S19	E45	4765	55 D	2	3			7.00	2.20		
CAPRI-G	15	0941	1030		S20	E55	4765	49	1+	1			5.00			
GOOD HOPE	15	1008 E	1055		S21	E51	4765	47	1		1010	2.70	5.00			
KIEV	15	1144 E	1202 D	1146 U	S10	W46	4749	18 D	1		1146		1.80		60	
SCHAUINS	15	1440 E	1445 D	1440	S19	E49	4765	5 D	2	1			7.00	2.00		Slow S-SWF
MT WILSON	15	1841	2455 D	1944	S18	E50	4765	374 D	1+							
HUANCAYO	15	1938 E	1950	1942	S17	E48	4765	12 D	1	3	1942	1.60	2.60	3.90		
VOROSHILOV	16	0023	0035	0025	S14	E46	4762	12	1	2	0025		2.91		72	
SYDNEY	16	0054	0106	0058	N13	W92	4743	12	□	2	0058	.25				
SYDNEY	16	0152 E	0203 D	0156	S08	W90	4741	11 E	□	2						
ALMA-ATA	16	0334 E	0530	0450	S19	E42	4765	116 D	2	3	0450		6.90		92	
TASHKENT	16	0405	0520	0447	S18	E42	4765	15	1+	3	0443		6.00	3.90	110	
ALMA-ATA	16	0420	0456	0424	S15	E43	4765	36	1	3	0424		3.90		76	
ALMA-ATA	16	0442	0519	0452	S17	E39	4765	37	2	3	0452		5.20		88	
CAPRI-G	16	0547	0630		N15	E12	4754	43	1	3			4.00			
TASHKENT	16	0548	0630 D	0617	N15	E13	4754	42 D	1	3	0616		2.00	2.40	80	
SIMEIZ	16	0605	0636	0613	N16	E12	4756	31	1	2	0611		2.00	2.90	64	
SIMEIZ	16	0733 E	0750 D		S16	E43	4765	17 D	1	2	0738		4.30	1.60	68	
KRASNYA	16	0737 E	0757 D	0742 U	S14	E43	4765	20 D	1	1	0742		.63		140	
GOOD HOPE	16	0753	0815	0744	S17	E43	4765	22	1		0744	2.30	3.20			
CAPRI-G	16	1054	1214		N23	E51	4764	20	2	3			6.00			
GOOD HOPE	16	1055	1215	1118	N22	E50	4764	80	1		1118	2.00	3.10			
CAPRI-G	16	1451	1521 D		S20	E33	4765	30 D	2	3			9.00			Slow S-SWF
MT WILSON	16	1836 E	2451 D	1855	S20	E36	4765	375 D	1+							
MT WILSON	16	2250	2300	2253	S12	E41	4765	10	1+							
VOROSHILOV	16	2256 E	2316		S20	E43	4765	20 D	1+	2	2257		2.70		81	
VOROSHILOV	17	0018	0041	0022	S17	E33	4765	33	1	1	0022		2.46		62	
VOROSHILOV	17	0045	0115	0052	S17	E35	4765	30	1+	1	0052		5.53		71	
ALMA-ATA	17	0310	0358	0324	S18	E37	4765	48	1+	2	0324		9.00		78	
ALMA-ATA	17	0316	0356	0320	S18	E29	4765	40	1	2	0320		2.80		73	
ALMA-ATA	17	0320	0328	0323	S25	E41	4765	18	1	2	0323		2.90		78	
SIMEIZ	17	0638 E	0705 D	0639 U	S20	E39	4765	27 D	1	2	0639		3.00	2.30	60	
CAPRI-G	17	0717	0731		S16	E29	4765	14	1	3			3.00			
CAPRI-G	17	0821	1230		S18	E37	4765	249	2+	2			7.00			
GOOD HOPE	17	0825	1350 D	0900 U	S21	E37	4765	325	2		0900	2.00	2.80			
ABASTUMANI	17	1116 E	1152 D	1123 U	S19	E38	4765	36 D	2	1	1123		18.50			
ABASTUMANI	17	1139 E	1152 D	1140 U	S18	E24	4765	13 D	1+	1	1140		8.00			
CAPRI-G	17	1059	1114		S11	W40	4750	15	1	3			3.00			
MT WILSON	17	1941	2027	1946	S12	W44	4750	46	1							
VOROSHILOV	18	0046	0125	0048	N23	E31	4764	39	2	1	0048		6.60		86	
CAPRI-G	18	0600	0617		S23	W67	4762	17	1	3			4.00			
GOOD HOPE	18	0728	0930	0835	S14	W56	4750	122	3		0836	8.00	15.50			
CAPRI-G	18	0730	0919	0825	S12	W49	4750	109	3	3			12.00			
KHARKOV	18	0830 E	0900		S12	W54	4750	30 D	1+	3	0833		10.70	2.20		
CAPRI-G	18	0828	0842		S16	E15	4765	14	1	1			2.00			

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CAPRI-G	18	0943	1003		S16	E04	4759	20	1	1			2.00			
GOOD HOPE	18	1015	1045	1020	S38	W20	4755	30	1		1020	3.00	4.50			
CAPRI-G	18	1017	1046		S35	W18	4755	29	1	1			3.00			
KHARKOV	18	1020 E	1041		S36	W20	4755	21 D	1	2	1024		3.20	1.60		
GOOD HOPE	18	1110	1128	1121	S23	E15	4765	18	1		1121	2.00	2.30			
KIEV	18	1112	1127	1121	S22	E14	4765	15	1+	3	1120		3.12		80	
KHARKOV	18	1113	1132 D	1120	S21	E13	4765	19 D	1+	3	1120		5.20	3.90		
KIEV*	18	1115 E	1128 D	1121	S24	E12	4765	13 D	1	2	1121		2.60			
CAPRI-G	18	1501	1520 D		N22	E19	4764	20 D	1	3			3.00			
HUANCAYO	18	1601 E	1608	1601	S10	W58	4750	7 D	1	1	1601	2.40	4.70	3.20		
CAPRI-G	19	0747	0755		N15	W24	4756	8	1	3			3.00			
CAPRI-G	19	0811	0828		N14	W22	4756	17	1	3			4.00			
CAPRI-G	19	1106	1114		S20	E01	4765	8	1	1			2.00			
CAPRI-G	19	1308	1330		S10	W71	4750	22	1	1			3.00			
CAPRI-G	19	1446	1457		N14	W32	4756	11	1	2			3.00			
HUANCAYO	19	1550 E	1614	1553	N17	W23	4756	24 D	1+	2	1553	5.60	6.20	2.40		
HUANCAYO	19	1559	1625	1601	S15	W04	4765	26	1	2	1601	3.50	3.80	2.70		
VOROSHILOV	20	0215	0219	0215	S17	W80	4750	4	1	2	0215		2.65		74	
SYDNEY	20	0221	0239	0227	N21	W69	4754	18	□	2	0227	.50				
SYDNEY	20	0233	0330	0241	S22	W08	4765	47	2	2	0241	8.00	10.00			Slow S-SWF
VOROSHILOV	20	0235	0306	0242	S24	W03	4765	31	2	2	0242		5.36		125	
CAPRI-G	20	0702	0717		S14	W10	4765	15	1	3			3.00			
KRASNYA	20	0703 E	0716 D	0703 U	S16	W06	4765	13 D	1	1	0703		.40		105	
KRASNYA	20	0727 E	0731	0727	S17	W09	4765	4 D	1	1	0727		.70		105	
CAPRI-G	20	0727	0744		N13	E36	4768	17	1	3			3.00			
CAPRI-G	20	0803	0822		S14	W10	4765	19	1	3			2.00			
CAPRI-G	20	0953	1007		S14	W11	4765	14	1	3			3.00			
CAPRI-G	20	1320 E	1342		S07	E85	4771	22 D	1	1			3.00			
MT WILSON	20	2032	2120	2035	S17	W15	4765	48	1							
CAPRI-G	21	0615 E	0644		N21	W18	4764	29 D	1	3			4.00			
CAPRI-G	21	0810 E	0832		S13	E90	4771	22 D	2	1						
CAPRI-G	21	0816	0829		N13	E28	4768	13	1	1			3.00			
KHARKOV	21	0858 E	0917 D		S03	E75	4771	19 D	1+	2	0904		7.60	1.80		Slow S-SWF
KHARKOV	21	1023	1059	1030	S05	E72	4771	36	1+	2	1028		6.70	1.90		
KHARKOV	21	1029	1102	1047	N20	W21	4764	33	1	2	1049		5.00	1.70		
CAPRI-G	21	1032	1055 D		N21	W19	4764	23 D	1	1			4.00			
GOOD HOPE	21	1054	1110	1055	N20	W20	4764	16	1		1055	2.10	2.30			
KHARKOV	21	1116	1143		N20	W20	4764	27	1	2	1118		5.10	1.20		
GOOD HOPE	21	1332	1411 D	1345	S19	W40	4759	39	1		1345	2.70	3.90			
CAPRI-G	21	1350 E	1426		S18	W41	4759	36 D	1+	3			5.00			
CAPRI-G	21	1502	1510		N21	W24	4764	8	1	3			3.00			Slow S-SWF
SYDNEY	22	0106	0112	0108	S11	E67	4776	6	1	2	0108	.75	2.00			
CAPRI-G	22	0545 E	0558		N22	W30	4764	13 D	1	3			4.00			
CAPRI-G	22	0645	0711		N16	W64	4756	26	1	3			3.00			
CAPRI-G	22	0740 E	0825		N22	W32	4764	45 D	1	3			3.00			
TASHKENT	22	0739	0820	0750	S21	W43	4765	44	1+	2	0751		6.00	2.40	95	
CAPRI-G	22	0740 E	0855		S19	W41	4765	75 D	2	3			7.00			
SIMEIZ	22	0743 E	0910 D		S22	W47	4765	87 D	1+	1	0745		11.00	3.30	52	S-SWF
KHARKOV	22	0751 E	0832		S20	W40	4765	41 D	2	2	0812		5.00	1.80		

SOLAR FLARES

SEPTEMBER 1958

OBSERVATORY	DATE SEPT 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
KHARKOV	22	0751 E	0904		S17	W46	4765	73 D	2	2	0812		14.60	1.80		
KRASNYA	22	0800 E	0825 D		S22	W42	4765	25 D	2	1	0813		7.60		122	
KRASNYA	22	0801 E	0825 D		N20	W33	4764	24 D	1	1	0813		1.20		80	
KHARKOV	22	0818 E	0832		N22	W34	4764	14 D	1	2	0821		2.90	1.60		
CAPRI-G	22	1009	1031		N19	W65	4756	22	2	3			6.00			
KIEV	22	1014	1032	1018 U	N16	W65	4756	18	2	2	1018		12.00		71	
CAPRI-G	22	1402	1418		N21	W36	4764	16	1	1			4.00			
CAPRI-G	23	1026	1059		S21	W49	4765	33	1+	1			4.00			S-SWF
NEDERHORST	23	1027	1050 D		S15	W44	4765	23 D	2	1						
CAPRI-G	23	1335	1510		N23	W48	4764	95	2	2			6.00			
CAPRI-G	24	0630 E	0745		N28	W04	4777	75 D	2	3			6.00			
CAPRI-G	24	0949 E	1006		S15	W51	4765	17 D	1+	2			4.00			
CAPRI-G	24	0955	1010		S19	E53	4776	15	1+	2			4.00			
SYDNEY	24	2244	2335	2255	N22	W62	4764	51	2	2	2255	3.00	6.00			
VOROSHILOV	25	0036	0041	0036	S14	E47	4778	5	1+	2	0036		2.16		96	
ABASTUMANI	25	0730 E	0750	0736 U	S22	E60	4778	20 D	1+	2	0744		4.00	2.40	96	
CAPRI-G	25	0740 E	0745 D		S24	E58	4778	5 D	1	3			3.00			
KIEV	25	0909 E	1025 D	0933 U	S22	W66	4765	76 D	1	2	0933		3.64		57	
GOOD HOPE	25	1012	1040	1023	S24	E57	4778	28	1		1023	1.30	2.90			
KIEV	25	1021	1030 D	1030 U	S22	E58	4778	9 D	1	2	1029		2.56		69	
CAPRI-G	25	1314	1402		S24	E54	4778	48	1	3			3.00			
MT WILSON	25	1937 E	1943 D		S24	E50	4778	6 D	1							
MT WILSON	25	2045	2113	2049	S07	E12	4771	28	1							
VOROSHILOV	25	2243	2300	2253	N16	W86	4764	17	2	2	2253		6.20		140	S-SWF
VOROSHILOV	25	2256	2314	2257	S08	E57	4781	18	1+	2	2257		2.26		133	
VOROSHILOV	25	2339	0005	2355	N19	W84	4764	26	1+	2	2355		2.65		97	
VOROSHILOV	26	0002	0054	0005	S21	E53	4778	52	1+	2	0005		2.39		129	
VOROSHILOV	26	0047	0106	0051	N19	W85	4764	19	2+	1	0051		7.50		238	
VOROSHILOV	26	0120	0132	0127	N19	W87	4764	12	1+	1	0127		4.50		120	
TASHKENT	26	0521	0535	0529	N22	W82	4764	14	1	2	0530			3.40	65	
VOROSHILOV	27	0031	0041	0032	N12	E52	4782	10	1+	2	0032		2.29		95	
ABASTUMANI	27	0659 E	0904 D	0844	N28	E56	4786	185 D	1	2	0844		2.00		70	
CAPRI-G	27	0706	0810		N28	E58	4786	64	1	3			4.00			
GOOD HOPE	27	1027 E	1056	1030	N09	E45	4782	39 D	1		1030	1.50	2.10			
KIEV*	27	1035	1055	1041	N09	E44	4782	20	1+	2	1041		1.70			
GOOD HOPE	27	1035	1105	1040	N29	E54	4786	30	1		1040	2.00	3.50			
SCHAUINS	27	1044 E	1050		N29	E52	4786	6 D	1	2			3.00	2.40		
CAPRI-G	27	1048 E	1110		N28	E58	4786	22 D	2	1			6.00			
CAPRI-G	27	1140	1305		N28	E55	4786	85	1+	2			5.00			
CAPRI-G	27	1250	1325		N12	W27	4768	35	1	2			4.00			
CAPRI-G	27	1316	1325		S11	E35	4781	9	1	1			3.00			
CAPRI-G	27	1436	1451		N29	W46	4769	15	1	1			4.00			
VOROSHILOV	28	0123 E	0138		N26	W56	4769	15 D	2	2	0126		3.30		220	S-SWF
CAPRI-G	28	0623	0632		N13	W39	4785	9	1	3			3.00			
TASHKENT	29	0519	0551	0521	S09	E09	4781	32	1+	2	0521		13.00	2.40	80	
CAPRI-G	29	1030	1115		S14	E08	4781	45	1	3			3.00			

SOLAR FLARES

SEPTEMBER 1958

OBSERVATORY	DATE SEPT 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
CAPRI-G	29	1144	1154		S11	E07	4781	10	1	3			3.00			
CAPRI-G	29	1205	1300		N35	E37	4787	55	1	1			3.00			
HUANCAYO	29	1556	1613	1558	S13	E59	4791	17	1&	2	1558	2.90	6.00	2.50		
SCHAUINS	29	1600 E	1611		S26	E52	4791	11 D	1&	1			2.00	3.20		
SYDNEY	30	0418 E	0448	0421	S06	W00	4781	30 D	1	1	0421	4.00	4.00			
TASHKENT	30	0609	0650	0625	S09	W02	4781	41	1	3	0621		3.00	2.20	55	
GOOD HOPE	30	0940	1000	0945	S27	E65	4793	20	1&		0945	1.70	5.20			S-SWF
KIEV*	30	0942 E	0951		S24	E56	4793	9 D	2	2			8.20			
CAPRI-G	30	1119	1133		S09	W01	4781	14	1	2			3.00			
CAPRI-G	30	1151	1215		S17	W25	4776	24	1&	3			4.00			
KIEV	30	1152	1202	1155	S17	W24	4776	10	1	1	1154		1.09		84	
KIEV*	30	1153 E	1204		S17	W22	4776	11 D	1&	2			1.40			
CAPRI-G	30	1459	1525 D		S13	W26	4776	26 D	1	3			3.00			
CAPRI-G	30	1503	1525 D		N31	W10	4780	22 D	1	3			4.00			
CAPRI-G	30	1515	1525 D		N30	W90	4769	10 D	1&	3						

These flare reports are addenda to the September 1958 flares published in CRPL-F 170 Part B, October 1958.

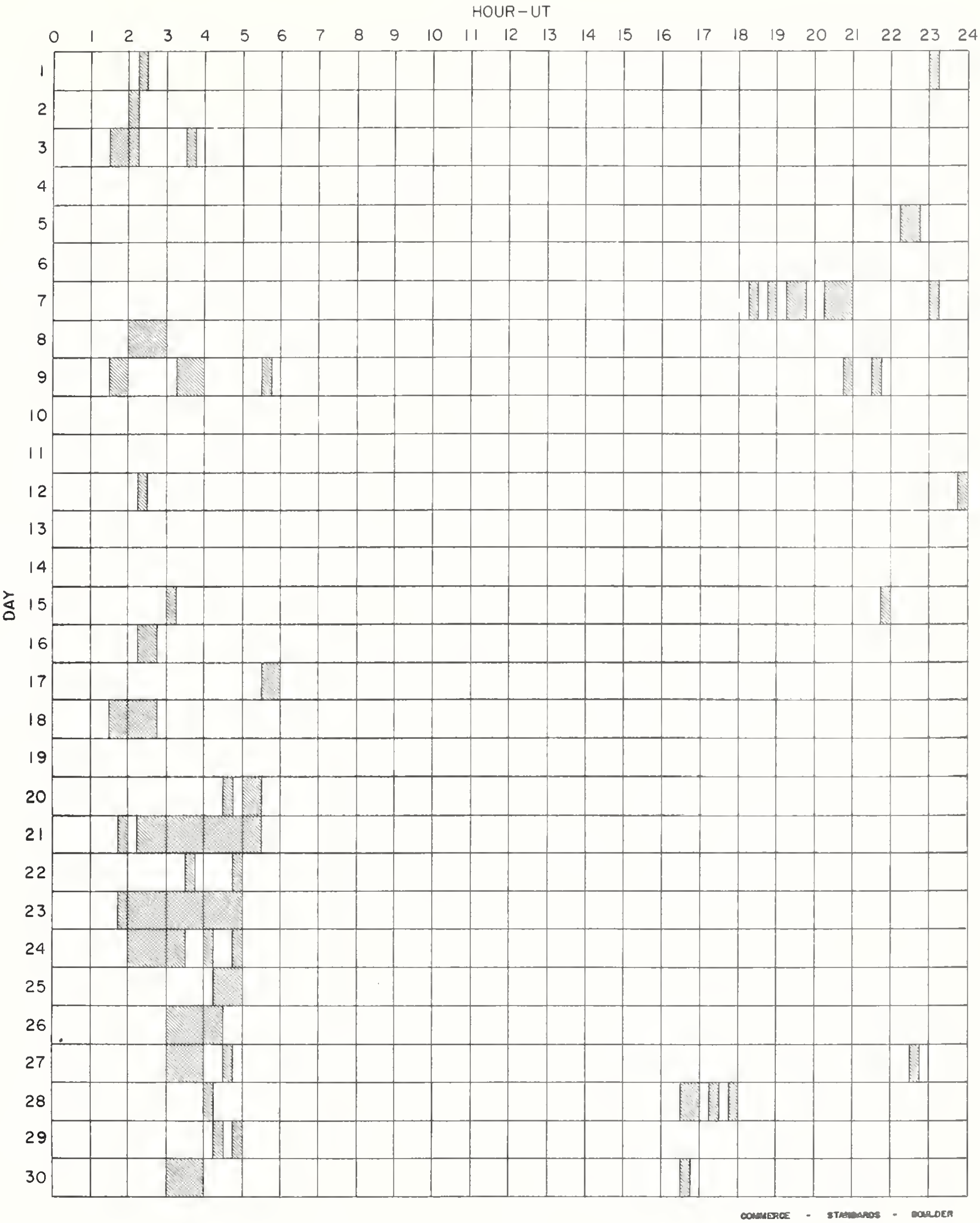
CAPRI G	ANACAPRI - GERMAN
CAPRI S	ANACAPRI - SWEDISH
GOOD HOPE	ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV*	KIEV UNIVERSITY
KODAIKNAL	KODAIKANAL
KRASNYA	KRASNAYA PAKHRA
MOSCOW	NIZMIR
MOSCOW-G	MOSCOW - GAISH
R O EDIN	ROYAL OBSERVATORY, EDINBURGH
R O HERST	GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK	SACRAMENTO PEAK
SCHAUINS	SCHAUINSLAND
USNRL	UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

E - LESS THAN
D - GREATER THAN
U - APPROXIMATE
& - PLUS
- - MINUS
◻ - NOT REPORTED

INTERVALS OF NO FLARE PATROL OBSERVATIONS

SEPTEMBER 1958



Stations Include:

Abastumani
Alma Ata
Anacapri (Swedish)
Arcetri
Athens
Capetown
Climax
Dunsink
Hawaii
Huancayo
Kharkov
Kiev GAO
Kiev University
Kodaikanal
Krasnaya Pakhra
Locarno
McMath
Meudon
Mitaka
Moscow University
Mt. Wilson
Nederhorst
Nizamiah
Ondrejov
Ottawa
Pirculi
Royal Greenwich Observatory Herstmonceux
Royal Observatory Edinburgh
Sacramento Peak
Simeis
Sydney
Tashkent
Uccle
U.S. Naval Research Laboratory
Voroshilov
Zürich.

SOLAR FLARES

OCTOBER 1958

OBSERVATORY	DATE OCT 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
SYDNEY	01	0149	0200 D	0153	S06	W13	4781	11 D	1	2	0153	3.00	3.00			
SYDNEY	01	0223	0340	0310	S28	E55	4798	77	1	2	0310	1.00	2.00			
KRASNYA	01	0704	0708	0705	N28	W00	4786	4	1	1	0705		.40		88	
KRASNYA	01	0706	0709 D	0707	S09	W15	4781	3 D	1	1	0707		1.90		86	
KRASNYA	01	0719	0726	0723	N24	E69	4794	7	1+	1	0723		2.30		82	
KRASNYA	01	0741	0747	0743	S20	W39	4776	6	1+	1	0743		2.30		86	
KIEV	01	1002	1027	1008	N13	W90	4785	25	1	2	1007				60	
GOOD HOPE	01	1212	1325 D	1225	S10	E51	4792	73 D	2		1225	4.00	7.00			
{STOCKHOLM	01	1219 E	1256 D		S14	E56	4798	37 D	2	3	1230	3.60	6.50			S-SWF
{STOCKHOLM	01	1310 E	1354 D		S14	E56	4798	44 D	1	3	1332	2.00	3.60			
MT WILSON	01	1624 E	1633 D	1624	N03	W25	4782	9 D	1							
{ABASTUMANI	02	0642	0825	0740	S09	W31	4781	103	1	3	0744		4.40	2.60	80	
{GOOD HOPE	02	0721 E	0835		S10	W33	4781	74 D	1		0758	1.70	2.10			
{KIEV*	02	1023	1039	1030 U	S10	W31	4781	16	1	2	1030		.90			
{KHARKOV	02	1028 E	1041		S08	W32	4781	13 D	1	1	1029		1.40	1.70		
KHARKOV	02	1028 E	1051		N29	W10	4786	23 D	1	1	1030		1.20	1.50		
KHARKOV	02	1132 E	1200 D		N09	W22	4782	28 D	1	1	1137		1.20			
GOOD HOPE	02	1143	1335	1230 U	S10	W30	4781	112	1		1230	1.30	2.50			
ALMA-ATA	03	0520	0547	0529	S16	E20	4792	27	1	2	0529		3.40		63	
TASHKENT	03	0552	0620 D	0601	S01	W47	4782	28 D	1+	3	0602		3.00	3.60	105	
{ALMA-ATA	03	0554	0624	0606	N01	W47	4782	30	2+	2	0606		38.30		76	Slow S-SWF
{ABASTUMANI	03	0602 E	0639	0605 U	N02	W48	4782	37 D	1+	1	0605		7.40			
ABASTUMANI	03	0835 E	0846 D	0842 U	S07	W52	4781	11 D	1+	1	0842		6.50			
KRASNYA	03	0933	0944	0937	S12	E06	4791	11	1	1	0937		.20		60	
KRASNYA	03	0930	0937	0933	N01	W50	4782	7	1	1	0933		1.00		88	
KIEV*	03	0958	1025	1002	N02	W48	4782	27	1	3	1001		5.20			
KIEV*	03	1142	1154	1146	N02	W50	4782	12	1	3	1147		3.70			
SCHAUINS	03	1553 E	1559 D		N03	W48	4782	6 D	1+	2			3.00	2.50		Slow S-SWF
VOROSHILOV	03	2340 E	0015	2348	N38	W35	4786	35 D	1+	3	2348		5.90		72	
VOROSHILOV	05	0452 E	0459		N24	E67	4805	7 D	1+	2	0452		3.67		105	
SIMEIZ	05	0753	0806	0755	N22	E64	4805	13	1+	2	0756		5.20	2.40	52	
GOOD HOPE	05	1200	1225	1210	S10	W80	4781	25	1+		1210	1.00	5.80			Slow S-SWF
VOROSHILOV	06	0228	0243	0234	N19	E47	4805	15	1+	2	0234		2.30		109	
{GOOD HOPE	06	0648	0707	0650	S12	W64	4784	19	1		0650	1.00	2.60			
{ABASTUMANI	06	0649	0720 D	0650	S12	W66	4784	31 D	1	2	0650		6.00			
ABASTUMANI	06	0735	0800	0755	N21	E66	4806	25	1	2	0755		5.60			
VOROSHILOV	06	2308	2326	2315	S18	W40	4791	18	1+	2	2315		2.46		104	
{SYDNEY	06	2310	2326 D	2323	N19	E38	4805	16 D	1	2	2323	3.00	4.00			
{VOROSHILOV	06	2318	2340	2322	N21	E35	4805	22	1+	2	2322		2.25		90	
SYDNEY	07	0250 E	0320	0252	N13	E20	4805	30 D	1	2	0252	2.00	2.00			
SYDNEY	07	0533	0540	0537	S11	W77	4784	7	1	2	0537	.50	2.00			
{ABASTUMANI	07	0710	0741 D	0716	S07	W33	4792	31 D	1	1	0735		4.50	1.80		
{TASHKENT	07	0712	0746	0715	S08	W33	4792	34	1	2	0714		2.00	1.90	80	
{SIMEIZ	07	0713	0750	0719	S05	W34	4792	37	1	3	0720		3.70	2.20	64	
{CAPRI-G	07	0740 E	0740		S07	W37	4792	1 D	1	2	0716		3.00			
CAPRI-G	07	0930 E	0938 D		S16	W47	4791	8 D	1	2	0932		3.00			Slow S-SWF
CAPRI-G	07	1510 E	1530 D		S09	W90	4784	20 D	1	2						Slow S-SWF
{SYDNEY	08	0117	0152	0123	S06	W42	4792	35	1	2	0123	3.00	4.00			

SOLAR FLARES

OCTOBER 1958

OBSERVATORY	DATE OCT 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
VOROSHILOV	08	0119	0142	0126	S12	W45	4792	23	1+	2	0126		2.52		112	
CAPRI-G	08	1326 E	1350 D		N12	E27	4806	24 D	1	1			3.00			
SYDNEY	08	2323 E	2327	2324	S11	E92	4815	4 D	□	2	2324	.75				
SIMEIZ	09	0724	0830 D	0735 U	N09	W59	4789	66 D	1	2	0730		3.00	2.90	64	
SIMEIZ	09	0744	0802	0749	N14	E16	4806	18	1	2	0746		1.00	2.70	52	
CAPRI-G	09	0748 E	0755 D		N13	E13	4806	7 D	1	3			2.00			
SIMEIZ	09	0833	0847 D	0837	N14	E15	4806	14 D	1	2	0837		1.50		68	
SCHAUINS	09	0834 E	0840		N14	E15	4806	6 D	1	2			2.00	3.60		
CAPRI-G	09	0835 E	0841		N13	E13	4806	6 D	1	3			3.00			
GOOD HOPE	09	0920	0950	0925	N09	W60	4789	30	1		0925	1.10	2.20			
CAPRI-G	09	0927 E	0945		N09	W57	4789	18 D	1	3			4.00			
GOOD HOPE	09	1120	1225	1158	N08	W60	4789	65	1		1158	2.00	4.00			
CAPRI-G	09	1205 E	1215 D		N10	W57	4789	10 D	1	3			5.00			
SCHAUINS	09	1200 E	1215 D		N11	W58	4782	15 D	1	2			3.00	2.40		
CAPRI-G	09	1522 E	1530 D		N25	E90	4819	8 D	1	3						
ABASTUMANI	10	0752 E	0822 D	0800 U	S16	W90	4817	30 D	2	1	0800		15.50			
CAPRI-G	10	1337 E	1355		S23	E80	4820	18 D	1	3			3.00			
GOOD HOPE	10	1342	1343 D		S15	E85	4820	1 D	1		1343	.50	5.70			
CAPRI-G	10	1350 E	1405		N21	W03	4805	15 D	1	3			4.00			
CAPRI-G	10	1419 E	1435 D		S14	W77	4792	16 D	1	3			3.00			
CAPRI-G	10	1459 E	1505		S28	E80	4820	6 D	1	3						
CAPRI-G	11	1012 E	1030		S29	E77	4820	18 D	1	3			3.00			
CAPRI-G	11	1031	1055 D		N04	W49	4805	24 D	1	3			2.00			
CAPRI-G	11	1118 E	1122 D		N17	W23	4805	4 D	1	3			3.00			
CAPRI-G	11	1425 E	1432 D		N09	W85	4789	7 D	1	3						
SYDNEY	12	0009	0040 D	0017	S27	E72	4820	31 D	1	2	0017	.75	3.00			
ABASTUMANI	12	0630 E	0751 D	0643 U	N16	W38	4805	81 D	1+	3	0645		8.60	3.20		
TASHKENT	12	0631	0712	0637	N16	W38	4805	41	1	3	0636		2.00	3.20	110	Slow S-SWF
CAPRI-G	12	0632 E	0700 D		N17	W38	4805	28 D	2	2			8.00			
GOOD HOPE	12	0646 E	0730		N16	W38	4805	44 D	1		0646	4.00	5.10			
CAPRI-G	12	0634	0700 D		S10	E23	4821	26 D	1	2			5.00			
SIMEIZ	12	0730 E			N16	W37	4805		1+	1	0646		6.00		76	
SIMEIZ	12	0710 E			S12	E24	4821		1	1	0646		2.30		52	
KIEV*	12	1116 E	1122		S11	E27	4821	6 D	1	3			.60			
GOOD HOPE	12	1155	1250	1211	S15	E59	4819	55	1		1211	2.00	4.30			
VOROSHILOV	13	0043	0101	0044	S24	E62	4820	78	1+	1	0044		2.50		99	Slow S-SWF
SIMEIZ	13	0746 E	0813 D	0748 U	S27	E52	4820	27 D	1	2	0758		3.00	2.10	68	
ABASTUMANI	13	0820 E	0823 D	0820 U	S23	E58	4820	3 D	1	3	0820		2.40		55	
KRASNYA	13	0904	0927	0919 U	S02	E90	4826	23	1+	2	0919		5.00		80	
KRASNYA	13	0919	0927	0921 U	N40	W90	4812	8	1+	2	0921		2.30		105	
SIMEIZ	13	0920	0956 D	0934 U	S26	E60	4820	36 D	1	2	0921		5.00	2.60	72	
GOOD HOPE	13	0921	0955	0933	S26	E59	4820	34	1		0933	1.80	3.80			
GOOD HOPE	13	0925	0947	0940	S13	W77	4817	22	1		0940	.60	2.90			
SIMEIZ	13	0927	0945 D	0936 U	S16	W79	4817	28 D	1	2	0937		4.40	2.00	60	
KRASNYA	13	0930	0946	0931	S15	W75	4817	16	1	2	0931		1.80		94	
KRASNYA	13	0946	1010	1005	S01	E90	4826	24	1	2	1005	.87	4.60		56	
KIEV	13	1017	1113	1033	N40	W90	4812	56	1	3	1033				60	
GOOD HOPE	13	1028	1045	1030	S24	E58	4820	17	1		1030	1.50	3.20			

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KIEV	13	1058	1156	1105	S02	E90	4826	58	1&	3	1105		1.05		108	S-SWF
GOOD HOPE	13	1103	1130	1107	S04	E90	4826	27	1&		1107	.70				
GOOD HOPE	13	1245	1302	1251	S28	E57	4820	17	1		1251	1.80	3.80			
CAPRI-G	13	1250 E	1257 D		S28	E51	4820	7 D	1	2						
STOCKHOLM	13	1250 E	1258 D		S28	E58	4820	8 D	1	3	1253	1.80	3.80			
CAPRI-G	13	1326 E	1329 D		S04	E90	4826	3 D	1	2						
CAPRI-G	13	1425 E	1432 D		S04	E90	4826	7 D	1	2						
CAPRI-G	13	1434 E	1436 D		S28	E57	4820	2 D	1	2			3.00			S-SWF
MT WILSON	13	1919	1934	1924	S05	E90	4826	15	1							
SYDNEY	13	2224 E	2344		S14	E90	4826			1	2229	1.00				
SYDNEY	14	0011 E	0040	0024	S14	E90	4826	29 D	□	2	0024	1.00				
SYDNEY	14	0202	0214 D	0209	S14	E89	4826	12 D	□	1	0209	1.00				
SYDNEY	14	0230	0312	0300	S14	E89	4826	42	□	2	0300	3.00				G-SWF
SYDNEY	14	0315	0325	0318	N15	W69	4805	10	1	2	0318	.75	2.00			
SYDNEY	14	0329	0357	0337	S14	E88	4826	28	□	2	0337	3.00				S-SWF
TASHKENT	14	0501 E	0800 D	0510	S04	E85	4826	179 D	1&	2	0509		8.00	5.30	155	
TASHKENT	14	0502	0519	0505	N17	W65	4805	17	1&	2	0505		5.00		130	Slow S-SWF
SYDNEY	14	0502	0600	0507	N16	W65	4805	58	2	1	0507	3.00	6.00			
SYDNEY	14	0507	0512	0509	S14	E87	4826	5	□	2	0509	1.00				
SYDNEY	14	0533	0600 D	0556	S14	E87	4826	27 D	□	1	0556	1.50				
ABASTUMANI	14	0555 E	0945 D	0713 U	S04	E90	4826	230 D	2	3	0559		23.30	3.80	73	
SIMEIZ	14	0707 E		0707 U	S06	E87	4826		1&	1	0705		12.00	2.80	78	
KHARKOV	14	0858 E	1050		S03	E82	4826	112 D	2	4	1020		20.50	2.70		
KIEV	14	0952	1027	1020	S02	E85	4826	35	1&	2	1019		4.90		89	
CAPRI-G	14	1017 E	1037 D		S03	E80	4826	20 D	1	3			4.00			
R O HERST	14	1019 E	1035	1022 U	S03	E75	4826	16 D	1	1	1023	.60	2.60	2.27	69	
KIEV*	14	1055 E	1102		N12	W71	4805	7 D	1&	2	1058		2.10			
GOOD HOPE	14	1055	1115	1057	N13	W75	4805	20	1		1057	.70	2.70			
KHARKOV	14	1056 E	1113	1059	N14	W73	4805	17 D	2&	4	1058		13.70	4.40		
CAPRI-G	14	1100 E	1104		N13	W70	4805	4 D	1	3			3.00			
CAPRI-G	14	1124 E	1145 D		S28	E41	4820	21 D	2	3			8.00			
KIEV	14	1131	1150	1134	S02	E85	4826	19	1&	2	1133		4.30		83	
KHARKOV	14	1132 E	1200 D	1136	S03	E80	4826	28 D	2	4	1036		20.50	3.70		
KIEV*	14	1134 E	1148 D		S04	E85	4826	14 D	1&	2	1141		11.30			S-SWF
STOCKHOLM	14	1134 E	1150 D		S04	E76	4826	16 D	1	3	1137	1.40	5.00			
GOOD HOPE	14	1134	1153 D	1138	S04	E84	4826	19 D	1		1138	1.10	10.50			
CAPRI-G	14	1135 E	1200 D		S03	E80	4826	25 D	1	3			5.00			
CAPRI-G	14	1232 E	1250 D		S03	E80	4826	18 D	1	3						
GOOD HOPE	14	1235 E	1300 D	1235	S04	E85	4826	25 D	1		1235	1.10	12.60			
VOROSHILOV	14	2319	2329	2322	S00	E76	4826	10	1&	2	2322		2.85		98	
SYDNEY	15	0032 E	0100	0043	S11	W11	4815	28 D	1	1	0043	4.00	4.00			
SYDNEY	15	0038	0053	0041	N13	W54	4805	15	1	1	0041	1.50	3.00			
SYDNEY	15	0055	0126	0122	S25	E28	4820	31	1	1	0122	2.00	2.00			
VOROSHILOV	15	0056	0128	0101	S25	E29	4820	32	1&	1	0101		2.17		103	
ALMA-ATA	15	0408 E	0820 D	0700	S08	E67	4826	252 D	3	2	0700		34.60		82	
ABASTUMANI	15	0640 E	0910 D	0810	S03	E70	4826	150 D	2	3	0813		9.20	2.80	84	
KRASNYA	15	0706	0716 D		S03	E69	4826	10 D	1	1	0710	2.79	3.70		52	
KRASNYA	15	1010	1016 D		S03	E69	4826	6 D	1&	1	1012	8.80	6.30		60	
NEDERHORST	15	1023 E	1100		S27	E26	4820	37 D	2	2						
STOCKHOLM	15	1023	1112		S27	E25	4820	49	2	2	1032	6.00	7.80			
KRASNYA	15	1023	1120 D	1036 U	S27	E27	4820	57 D	1&	1	1036	4.71	3.40		81	S-SWF

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CAPRI-G	15	1027 E	1130 D		S27	E27	4820	63 D	3	2			13.00			
R O HERST	15	1028 E	1055	1028 U	S28	E28	4820	27 D	1	2	1031	2.70	3.50	2.43	85	
CAPRI-G	15	1137 E	1216 D		S03	E65	4826	39 D	2	2			7.00			
MT WILSON	15	1536	1545 D	1540	N14	W70	4806	9 D	1							
MT WILSON	15	1617	1945	1617	S04	E62	4826	28	1							
VOROSHILOV	16	0136	0150	0140	N01	E60	4826	14	1+	2	0140		3.84		88	
ALMA-ATA	16	0502 E	0616	0543	S11	E85	4829	74 D	2	2	0543		19.10		70	
ALMA-ATA	16	0502 E	0810 D	0554	S13	W45	4811	188 D	1+	2	0554		7.70		53	
ALMA-ATA	16	0558	0605	0600	S02	E58	4856	7	2	3	0600		15.80		76	
ALMA-ATA	16	0558	0605	0600	S02	E55	4856	7	2	3	0600		14.30		69	
CAPRI-G	16	0800 E	0820 D		S11	W44	4811	20 D	1	2			3.00			
GOOD HOPE	16	0841	0855	0846	S11	E85	4829	14	1		0846	.50	5.70			
CAPRI-G	16	0909 E	0918		S04	E55	4826	9 D	1+	3			6.00			Slow S-SWF
GOOD HOPE	16	0944 E	0953 D		S04	E55	4826	9 D	1		0944	1.40	2.50			
CAPRI-G	16	1035	1100		S19	E10	4819	25	1	3			3.00			
GOOD HOPE	16	1035	1104 D	1043	S20	E15	4819	29 D	1		1043	2.40	2.70			
CAPRI-G	16	1153 E	1200		N22	E22	4822	7 D	1	3			3.00			
CAPRI-G	16	1459 E	1505 D		S04	E52	4826	6 D	1	1			6.00			
CAPRI-G	17	0802 E	0804 D		N21	E12	4818	2 D	1	1			4.00			
CAPRI-G	17	0938 E	1007 D		N21	E11	4818	29 D	1	2			3.00			
GOOD HOPE	17	1110	1210	1120	S29	E01	4820	60	1		1120	1.80	2.20			
CAPRI-G	17	1434 E	1436 D		S23	E90	4829	2 D	1	2						
SIMEIZ	18	0730 E	0800 D		S16	W21	4819	30 D	1	1	0735		2.40		64	
TASHKENT	19	0547	0631	0604	N18	W14	4818	44	1+	1	0557		9.00	2.20	90	
ABASTUMANI	19	0637	0651	0639	N16	W86	4810	14	1+	3	0639		9.40		60	
ABASTUMANI	19	0634 E	0813	0726	S18	W38	4819	99 D	3	3	0726		25.70	3.80	152	
CAPRI-G	19	0635 E	0748	0725	S15	W39	4819	73 D	2	2	0725		7.00			
TASHKENT	19	0659	0750	0725	S18	W28	4819	51	2+	1	0728		20.00	4.50	180	S-SWF
SIMEIZ	19	0709 E	0723 D	0709 U	S15	W27	4819	14 D	1	1	0709		5.00		72	
GOOD HOPE	19	0733 E	0820		S15	W36	4819	47 D	2		0739	5.00	6.50			
CAPRI-G	19	0824	0827 D		N23	W27	4818	3 D	1	2			2.00			
CAPRI-G	19	0851 E	0857		N23	W16	4818	6 D	1	3			3.00			
CAPRI-G	19	1035 E	1128	1054	N14	W09	4818	43 D	2	3	1054		9.00			
GOOD HOPE	19	1040	1125	1048	N15	W10	4818	45	1+		1048	4.50	4.60			
GOOD HOPE	19	1309	1335	1318	N18	E85	4841	26	1		1318	1.00	11.50			S-SWF
CAPRI-G	19	1352 E	1357 D		S06	E90	4832	5 D	1	3						
GOOD HOPE	19	1442	1456 D	1448	S17	W44	4819	14 D	1		1448	1.80	2.70			
SYDNEY	20	0111	0138	0119	S22	W29	4819	27	1	2	0119	2.00	3.00			
SYDNEY	20	0403	0418	0406	N20	E79	4833	15	1	2	0406	.50	3.00			
SYDNEY	20	0539	0548	0543	N20	W24	4818	11	1	2	0543	2.00	2.00			
CAPRI-G	20	0823 E	0830		S09	E24	4829	7 D	1	3			3.00			
GOOD HOPE	20	1032	1045	1037	N19	E70	4833	13	1		1037	1.20	3.20			
GOOD HOPE	20	1055	1130	1107	N18	E68	4833	35	2		1107	2.00	5.30			
CAPRI-G	20	1055 E	1130 D	1104	N17	E70	4833	35 D	1+	3	1104		5.00			S-SWF
STOCKHOLM	20	1103 E	1122 D		N17	E66	4833	19	1+	2	1108	2.20	5.10			
CAPRI-G	20	1321 E	1329		N24	W25	4818	8 D	1	3			3.00			
CAPRI-G	20	1410 E	1427 D		N25	W25	4818	17 D	1	3			4.00			
MT WILSON	20	1851	1911	1856	S07	W06	4826	20	1							

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MT WILSON	20	1915	1931	1919	S16	W58	4819	16	1b							S-SWF
VOROSHILOV	21	0041	0053	0045	S20	W62	4819	12	1b	2	0045		2.44		108	
SYDNEY	21	0041	0053 D	0044	S18	W59	4819	12 D	1	2	0044	1.00	3.00			
TASHKENT	21	0638	0700	0647	S23	W49	4820	22	1	3	0642		8.00	2.80	55	
CAPRI-G	21	0732 E	0735 D		S10	E15	4829	3 D	1	3			2.00			
CAPRI-G	21	0823	0833		S04	W10	4826	10	1	3			5.00			
CAPRI-G	21	0905 E	0915		S11	W36	4819	10 D	1	3			3.00			
CAPRI-G	21	1041 E	1050		S07	W09	4826	9 D	1	3			4.00			
CAPRI-G	21	1048	1103		N23	W48	4818	15	1	3			6.00			
CAPRI-G	21	1121 E	1235		N20	W31	4818	14 D	2	3			8.00			
GOOD HOPE	21	1229	1258	1237	N25	W49	4818	29	1		1237	2.20	3.40			
CAPRI-G	21	1233 E	1250 D		N23	W45	4818	17 D	1	3			5.00			
MT WILSON	21	1541	1557 D	1551	N20	W46	4818	16 D	1b							G-SWF
MT WILSON	21	1951	2036	1953	S09	W02	4829	45	2-							S-SWF
MT WILSON	21	1952	2036	1954	S04	W13	4826	44	1							
SYDNEY	21	2318 E	0119	2333	S05	W22	4826	121 D	2	2	2333	8.00	9.00			
VOROSHILOV	21	2318	0127	2326	S05	W21	4826	129	3	3	2326		5.70		456	S-SWF
MT WILSON	21	2322	2437 D	2327	S04	W21	4826	75 D	2b							
SYDNEY	21	2356	0002	2358	N17	W47	4818	6	1	3	2358	1.50	2.00			
SYDNEY	22	0154	0202 D	0158	N20	W52	4818	8 D	1	3	0158	2.00	3.00			
SYDNEY	22	0359	0500 D	0406	N20	W53	4818	61 D	1	2	0406	1.50	3.00			
GOOD HOPE	22	0650	0835	0715	S05	W13	4829	105	2		0715	7.50	7.90			
ABASTUMANI	22	0652	0808 D	0713	S04	W18	4829	76 D	3	2	0714		23.80	3.10		Slow S-SWF
SIMEIZ	22	0712 E	0830 D	0712	S07	W13	4829	78 D	2	2	0709		9.00	3.00	112	
TASHKENT	22	0655	0810 D	0710	S06	W15	4829	75 D	2	3	0714		9.00	3.50	95	
CAPRI-G	22	1155 E	1207 D		N14	E07	4831	12 D	1	3			3.00			
CAPRI-G	22	1355 E	1403		N20	W63	4818	8 D	1	3			4.00			
CAPRI-G	22	1407 E	1536	1428	S03	W28	4826	89 D	2	3	1428		8.00			Slow S-SWF
SCHAUINS	22	1419 E	1449 D		S03	W31	4826	30 D	1	2			4.00	2.30		
CAPRI-G	22	1431	1510	1451	S06	W11	4829	39	2	3	1451		7.00			
CAPRI-G	22	1517	1526		S34	E66	4834	9	1	3			2.00			
CAPRI-G	22	1525	1543 D		S07	W26	4826	18 D	1b	2			7.00			Slow S-SWF
VOROSHILOV	22	2321	2329	2322	S06	W70	4819	8	1b	2	2322		2.35		108	
KODAIKNL	23	0225 E	0252 D	0234	S09	W20	4829	27 D	1	1	0225	4.68	5.15	2.00	99	
VOROSHILOV	23	0229	0257	0235	S06	W21	4829	28	2	2	0235		5.25		132	
SYDNEY	23	0231 E	0302	0236	S04	W21	4829	31 D	2	2	0236	5.00	6.00			
SYDNEY	23	0232	0352	0256	S03	W35	4826	70	3	2	0256	10.00	13.00			
KODAIKNL	23	0234 E	0305 D	0252	S05	W40	4826	31 D	2	1	0247	5.85	7.61	1.60	106	
VOROSHILOV	23	0239	0323 D	0253	S06	W36	4826	44 D	2	2	0253		5.60		125	
ABASTUMANI	23	0625	0643	0628	S16	W10	4829	18	1	1	0628		2.35			
ABASTUMANI	23	0625	0655	0647	S10	W15	4829	30	1b	1	0647		5.89			
SCHAUINS	23	0648 E	0656		S11	W18	4829	8 D	1	2			4.00	1.80		
CAPRI-G	23	0808 E	0810 D		S08	W18	4829	2 D	1	1			3.00			
GOOD HOPE	23	1149	1210	1154	N23	W78	4818	21	1		1154	.90	4.30			Slow S-SWF
SCHAUINS	23	1151 E	1200 D		N23	W74	4818	9 D	1	2			5.00	1.80		
SYDNEY	23	2237	2246	2241	S19	E65	4840	9	1	2	2241	.75	2.00			
SYDNEY	23	2255 E	2310 D	2304	S12	W24	4829	15 D	1	2	2304	2.00	3.00			
VOROSHILOV	23	2339	2350	2343	N20	E25	4833	11	1	2	2343		2.15		73	
SCHAUINS	24	0854 E	0915		S35	E39	4838	31 D	1	1	0854		2.00	4.00		

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SIMEIZ	24	0923 E	0955 D	0931 U	S06	W58	4826	32 D	1	2	0928		3.30	2.00	68	
SCHAUINS	24	0930 E	1001 D		S03	W55	4826	31 D	1	1			5.00	2.00		
CAPRI-G	24	1023 E	1032 D		S11	W28	4829	9 D	1	2			5.00			
SCHAUINS	24	1037 E	1050 D		S03	W55	4826	13 D	1	1			4.00	2.60		
CAPRI-G	24	1049 E	1057 D		S05	W54	4826	8 D	1	2			5.00			
SCHAUINS	24	1131 E	1150		S35	E38	4838	19 D	1&	2	1132		2.00	6.60		
CAPRI-G	24	1258 E	1301 D		S11	W28	4829	3 D	1	2			4.00			
SCHAUINS	24	1330 E	1339		S12	W30	4829	9 D	1	2			4.00	3.30		
CAPRI-G	24	1420 E	1536 D	1450	S05	W55	4826	16 D	2&	2	1450		11.00			Slow S-SWF
R O HERST	24	1451 E	1623 D	1500 U	S05	W55	4826	32 D	2	3	1500	2.80	5.60	2.53	95	
SYDNEY	25	0113	0127	0119	S05	W46	4829	14	1	2	0119	3.00	5.00			
CAPRI-G	25	0705 E	0708 D		S12	W37	4829	3 D	1	3			3.00			
CAPRI-G	25	1040 E	1056		S06	W10	4832	16 D	1	3			6.00			
CAPRI-G	25	1251 E	1318 D		N20	W87	4818	27 D	1	3			4.00			
CAPRI-G	26	0804 E	0806 D		S14	E57	4843	2 D	1	3			3.00			
SCHAUINS	26	0910 E	1430 D		S10	W58	4829	320 D	1	2			3.00	2.30		
CAPRI-G	26	0918 E	0932 D		S14	E57	4843	14 D	1	3			2.00			
CAPRI-G	26	1124 E	1150		S15	E57	4843	26 D	2	3			8.00			
CAPRI-G	26	1210 E	1225 D		S15	E57	4843	15 D	1	3			3.00			
CAPRI-G	26	1305 E	1320		S15	E57	4843	15 D	1	3			4.00			
MT WILSON	26	1833 E	1954	1916	S15	E51	4843	81 D	1&							
VOROSHILOV	27	0139	0155	0144	S13	W69	4829	16	1&	2	0144		2.35		88	
ALMA-ATA	27	0500 E	0624	0505	S14	E47	4843	84 D	1&	2	0505		9.10		56	
CAPRI-G	27	0642 E	0659		S14	E44	4843	17 D	1	1			4.00			
SCHAUINS	27	0755 E	1110 D		S10	W72	4829	495 D	1&	2			2.00	2.90		
CAPRI-G	27	0820 E	0930		S10	W69	4829	70 D	1	3			4.00			
CAPRI-G	27	0820 E	0950		S14	E43	4843	90 D	1	3			3.00			
CAPRI-G	27	1015 E	1046		S05	W10	4835	31 D	1	3			6.00			
CAPRI-G	27	1032 E	1050		S10	W70	4829	18 D	1	3			3.00			
CAPRI-G	27	1117 E	1132 D		S09	W75	4829	15 D	1	3			4.00			
CAPRI-G	27	1341 E	1405		S09	W71	4829	24 D	1	3			6.00			
MT WILSON	27	2222	2258 D	2237	N06	W31	4841	36 D	1							
VOROSHILOV	28	0009	0020	0011	S18	W82	4829	11	1	2	0011		4.90		78	
CAPRI-G	28	0725 E	0813		S14	E30	4846	48 D	1	3			3.00			
ALMA-ATA	28	0730	0803 D	0742	N08	W40	4841	33 D	2	2	0742		13.50		71	
CAPRI-G	28	0940	0945		S12	E30	4846	5	1	3			2.00			
CAPRI-G	28	1024 E	1111 D		N07	W38	4841	47 D	1	3			3.00			
SCHAUINS	28	1054 E	1115 D		N07	W37	4841	21 D	1	2			2.00	1.70		
CAPRI-G	28	1110 E	1127		S05	W22	4835	17 D	1	3			4.00			
CAPRI-G	28	1150 E	1155		S13	W85	4829	5 D	1	3			4.00			
CAPRI-G	28	1330 E	1337 D		S17	E90	4849	7 D	1	2						
CAPRI-G	28	1350 E	1355		N09	W38	4841	5 D	1	3			2.00			
CAPRI-G	28	1350 E	1410 D		S13	E31	4846	20 D	1	3			5.00			
MT WILSON	28	1514	1539	1519	N06	W46	4841	25	1							
ALMA-ATA	29	0703	0727	0710	N05	W50	4841	24	2	2	0710		12.50		70	
CAPRI-G	29	0708 E	0710 D		N07	W50	4841	2 D	1	1			5.00			
KHARKOV	29	0915 E	0935		S03	W85	4832	20 D	1	3	0920		8.50			
CAPRI-G	29	0922 E	0955 D		N02	W90	4841	33 D	1	3						

SOLAR FLARES

OCTOBER 1958

OBSERVATORY	DATE OCT 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
SIMEIZ	29	0923	0934	0927 U	N17	E89	4854	11	1&	1	0927		13.00		72	
KHARKOV	29	0926 E	0945	0934	N18	E87	4854	19 D	2	3	0934		16.70	2.30		
KIEV*	29	0927 E	0931	0929 U	N14	E91	4854	4 D	1&	2	0929		14.00			
KIEV*	29	0929	1007		N14	E91	4854	38	□	2						
CAPRI-G	29	0930 E	0950 D		S14	E14	4847	20 D	1	3			5.00			
CAPRI-G	29	1005 E	1023		S13	E15	4847	18 D	1	3			4.00			
CAPRI-G	29	1005 E	1030 D		N06	W50	4841	25 D	1	3			4.00			
CAPRI-G	29	1101 E			N02	W90	4836		1	2						
CAPRI-G	29	1312 E	1325 D		N06	E66	4851	13 D	1	2			5.00			
MT WILSON	29	1556	1635 D	1622	N05	E57	4851	39	1							
SYDNEY	30	0139	0156	0145	N07	W60	4841	15	1	2	0145	1.50	3.00			
CAPRI-G	30	0809 E	0820 D		N12	E04	4844	11 D	1	3			2.00			
CAPRI-G	30	0809 E	0930		S14	E52	4849	81 D	1	3			2.00			
CAPRI-G	30	1155 E	1212		S14	E52	4849	17 D	1	3			4.00			
SCHAUINS	30	1241 E	1325 D		S16	E37	4849	44 D	1	1			3.00	1.80		
CAPRI-G	30	1242 E	1330 D		S14	E52	4849	48 D	1	3			4.00			
STOCKHOLM	30	1248 E	1254 D		S20	E51	4849	6 D	1	1	1250	1.40	2.40			
CAPRI-G	30	1506 E	1512 D		S08	W52	4835	6 D	1	1			3.00			
MT WILSON	30	1528	1619 D	1617	S05	W59	4835	51 D	1							
MT WILSON	30	2021	2131	2050	S18	E49	4849	10	1							
MT WILSON	30	2147	2207 D	2202	S17	E49	4849	20 D	1&							
ABASTUMANI	31	0644	0902 D	0819	N08	W80	4841	138 D	1&	2	0819		6.55			S-SWF
SIMEIZ	31	0812	0830	0817	N05	W81	4841	18	1&	2	0817		9.00		60	
SIMEIZ	31	0940	0950 D	0941	N21	E44	4856	10 D	1	2	0941		1.80		64	
KIEV	31	0940	0956	0943	N22	E46	4856	16	1	2	0942		1.17		102	
KIEV	31	0944	0952	0947	N06	W81	4841	8	1&	2	0947		2.38		84	
SIMEIZ	31	0941	0952	0947	N05	W81	4841	11	1&	2	0947		6.50		60	
SIMEIZ	31	0945 E	1100 D	0959 U	S18	E42	4849	75 D	2	2	0956		14.00	3.20	72	S-SWF
KIEV	31	0951	1013	1003	S16	E38	4849	22	1	2	1003		1.22		102	
KIEV	31	1106	1153	1120	S17	E37	4849	47	1&	2	1119		2.45		87	S-SWF
KIEV*	31	1110	1149	1117 U	S17	E41	4849	39	1	2	1120		2.80			

COMMERCE - STANDARDS - BOULDER

These flare reports are addenda to the October 1958 flares published in CRPL-F 171 Part B, November 1958.

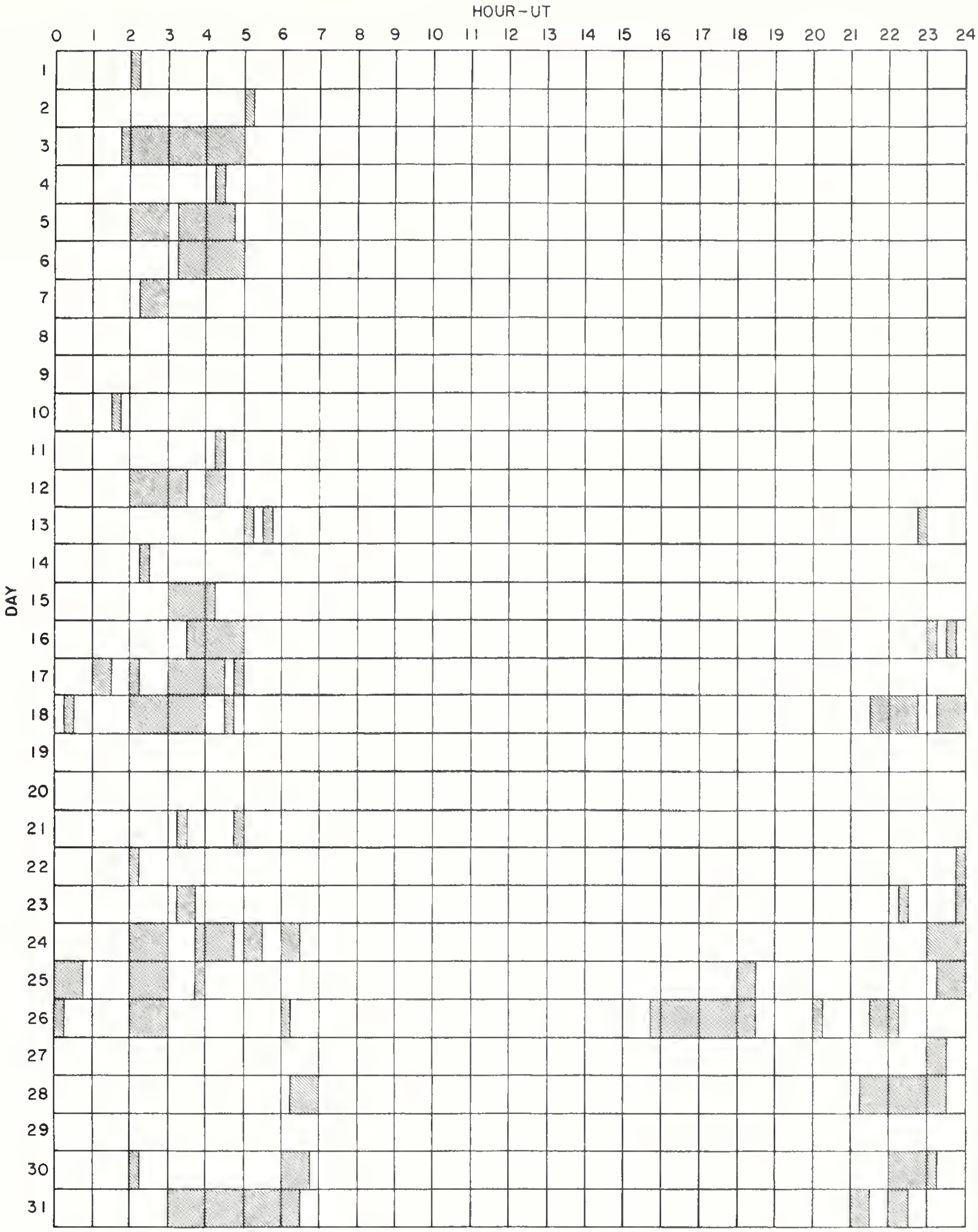
CAPRI G	ANACAPRI - GERMAN
CAPRI S	ANACAPRI - SWEDISH
GOOD HOPE	ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV*	KIEV UNIVERSITY
KODAIKNAL	KODAIKANAL
KRASNYA	KRASNAYA PAKHRA
MOSCOW	NIZMIR
MOSCOW-G	MOSCOW - GAISH
R O EDIN	ROYAL OBSERVATORY, EDINBURGH
R O HERST	GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK	SACRAMENTO PEAK
SCHAUINS	SCHAUINSLAND
USNRL	UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

E - LESS THAN
D - GREATER THAN
U - APPROXIMATE
& - PLUS
- - MINUS
□ - NOT REPORTED

INTERVALS OF NO FLARE PATROL OBSERVATIONS

OCTOBER 1958



Stations Include:

Abastumani
Alma Ata
Anacapri (Swedish)
Arcetri
Athens
Capetown
Climax
Dunsink
Hawaii
Huancayo
Kharkov
Kiev, GAO
Kiev University
Kodaikanal
Krasnaya Pakhra
Locarno
McMath
Meudon
Mitaka
Moscow University
Mt. Wilson
Nederhorst
Nizamiah
Ondrejov
Ottawa
Royal Greenwich Observatory Herstmonceux
Simeis
Sacramento Peak
Sydney
Tashkent
Uccle
U.S. Naval Research Laboratory
Utrecht
Voroshilov
Zürich

SOLAR FLARES

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
	July 1957	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
MT WILSON	02	2133	2145		N10	W28	4039	12	1							
MT WILSON	03	1621	1655	1625	S10	W20	4043	34	1							
MT WILSON	03	1734	1734 D		S30	E13	4044	1 D	1							S-SWF
MT WILSON	03	2228	2237	2230	N13	E27	4046	9	1							
MT WILSON	05	1426	1430 D		S13	E65	4051	4 D	1+							
MT WILSON	05	2319	2447	2331	N14	W10	4046	28	1							
MT WILSON	08	1854	2136	2013	S30	W45	4044	162	1+							
MT WILSON	09	0042	0106 D	0048	N13	W17	4048	24 D	1							
MT WILSON	12	1622	1800		S32	E26	4061	98	1							
MT WILSON	15	0100	0145	0106	S33	W06	4061	45	1+							Slow S-SWF
MT WILSON	16	1743	1903 D	1755	S33	W26	4061	80 D	2-							Slow S-SWF
MT WILSON	16	1819	1820 D		S37	E34	4067	1 D	1							
MT WILSON	20	1405	1502	1415	N30	E24	4065	57	1							Slow S-SWF
MT WILSON	20	2358	2458	2430	N30	E18	4065	60	1							
MT WILSON	21	1325 E	1419	1347	N30	E10	4065	54 D	1							S-SWF
MT WILSON	21	1439 E	1439 D		N10	E59	4075	1 D	1							
MT WILSON	21	1818	1834 D	1825	N30	E09	4065	16 D	1							
MT WILSON	21	1954	2015	2008	N31	E08	4065	21	1							G-SWF
MT WILSON	21	2136	2302	2148	N30	E06	4065	86	1+							S-SWF
MT WILSON	22	2342	2358	2347	N31	W10	4065	16	1							S-SWF
MT WILSON	24	1637 E	1740	1643	N31	W06	4073	63 D	1							Slow S-SWF
MT WILSON	24	1712	1945	1827	S24	W28	4070	153	3-							Slow S-SWF
MT WILSON	24	2325	2340 D		N23	W55	4065	15 D	1							
MT WILSON	26	1830	1900		N32	W35	4073	30	1							
MT WILSON	27	1744	1815		S24	W66	4070	31	1							
MT WILSON	27	2050	2124		N26	W69	4065	34	1+							
MT WILSON	30	1720	1728		N09	W52	4075	8	1							
MT WILSON	30	2155	2210		N21	W41	4075	15	1							
MT WILSON	30	2318	2325		N25	E60	4083	7	1							
MT WILSON	31	1410 E	1416	1410	S30	E23	4082	6 D	1							
MT WILSON	31	1603	1613		N15	W71	4075	10	1							
MT WILSON	31	1725	1730		S35	E22	4082	5	1							
MT WILSON	31	1925	1945		N09	W79	4075	20	1							
	Aug. 1957															
MT WILSON	02	0053 E	0057 D		N20	W90	4075	4 D	□							S-SWF

SOLAR FLARES

OBSERVATORY	DATE Aug. 1957	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
MT WILSON	02	1815 E	1830		N09	E55	4089	15 D	1							Slow S-SWF
MT WILSON	02	2336	2451	2407	N09	E54	4089	75	1							
MT WILSON	04	1827	1836 D	1836	N26	W02	4083	9 D	1							Slow S-SWF
MT WILSON	05	1905	1920		N26	W07	4083	15	1+							S-SWF
MT WILSON	07	2345	2408	2354	N26	W47	4083	23	1+							Slow S-SWF
MT WILSON	09	2149	2210		S11	E71	4099	21	1							
MT WILSON	10	0125	0142	0129	N26	W71	4083	17	1							Slow S-SWF
MT WILSON	10	2042	2046		S30	W90	4082	4	1							
MT WILSON	11	1812	1818		S30	E90	4106	6	1							
MT WILSON	12	1500 E	1610		N15	E25	4098	70 D	1+							G-SWF
MT WILSON	17	1717	1737		N10	E53	4112	20	1							G-SWF
MT WILSON	17	1930	1945		N10	E53	4112	15	1							
MT WILSON	17	2135	2150		S22	E10	4105	15	1							S-SWF
MT WILSON	20	1645	1655		N09	E15	4112	10	1							S-SWF
MT WILSON	22	1615	1650		N25	E09	4112	35	1							
MT WILSON	25	0037	0046		N24	W39	4112	9	1							
MT WILSON	25	1506	1515		N17	W38	4112	9	1							
MT WILSON	25	1802	1830		N10	E43	4122	28	1							Slow S-SWF
MT WILSON	26	2115	2140		S27	W05	4117	25	1							
MT WILSON	28	1610	1645		S31	E39	4125	35	1+							S-SWF
MT WILSON	28	2020	2048	2024	S28	E29	4125	28	3							S-SWF
MT WILSON	28	2258	2315		S32	E26	4125	17	1							
MT WILSON	29	1601	1607		S30	E15	4125	6	1							S-SWF
MT WILSON	29	1703	1726		S30	E14	4125	23	1							
MT WILSON	29	2104	2155	2115	N25	E26	4124	51	2							Slow S-SWF
MT WILSON	29	2212	2240		S31	E17	4125	28	1+							
MT WILSON	30	1642	1730		S33	E10	4125	48	1+							Slow S-SWF
MT WILSON	31	1431 E	1448	1431	N25	E02	4124	17 D	1							
MT WILSON	31	2035	2302		N14	W10	4124	147	2							Slow S-SWF
	Sept. 1957															
MT WILSON	01	1836 E	1857	1836	N12	W18	4124	19 D	1+							S-SWF
MT WILSON	01	1915	1930	1919	S30	W14	4125	15	1+							
MT WILSON	01	1946	2021	2001	N23	W15	4124	35	2-							S-SWF
MT WILSON	02	0041	0050	0042	S30	W22	4125	9	1							

SOLAR FLARES

OBSERVATORY	DATE Sept 1957	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
MT WILSON	02	1554	1606	1558	N13	W30	4124	12	1							
MT WILSON	02	1806 E	1836	1820	N12	W39	4124	30 D	1+							
MT WILSON	03	1422 E	1451 D	1427	N25	W33	4124	29 D	3							S-SWF
MT WILSON	03	2116	2147		N15	W47	4124	31	1+							Slow S-SWF
MT WILSON	04	2320	2439		N15	W64	4122	79	1+							S-SWF
MT WILSON	05	2116	2200	2123	N11	E73	4134	44	1+							
MT WILSON	06	1907	1934		N14	E52	4134	27	1							
MT WILSON	07	2136	2219		N14	E42	4134	43	1+							Slow S-SWF
MT WILSON	10	1654	1703		S22	W48	4136	9	1							
MT WILSON	10	1656	1703		S12	E13	4141	7	1							
MT WILSON	10	1735	1757		S22	W49	4136	22	1							G-SWF
MT WILSON	11	1819	1838		S20	W18	4138	19	1							
MT WILSON	11	1839	1900		S43	E24	4144	21	1							Slow S-SWF
MT WILSON	12	0020	0040		N10	W10	4134	20	1							
MT WILSON	13	1424	1452	1434	N09	W33	4134	28	1							S-SWF
MT WILSON	13	1845	1901		S17	W32	4138	16	1							S-SWF
MT WILSON	13	1942	2002		S15	W23	4141	20	1+							Slow S-SWF
MT WILSON	15	1940	2005		N23	E47	4151	25	1							
MT WILSON	15	2030	2040		N08	E55	4152	10	1							
MT WILSON	15	2043	2100		N10	W67	4134	17	1+							S-SWF
MT WILSON	15	2228	2250		N08	E54	4152	22	1							Slow S-SWF
MT WILSON	15	2320	2327		N08	E60	4152	7	1							
MT WILSON	16	1455 E	1515		N09	E43	4152	20 D	1							Slow S-SWF
MT WILSON	16	1525	1602		N09	E43	4152	37	2-							S-SWF
MT WILSON	17	0005	0034		N09	E42	4152	29	1							
MT WILSON	17	1515	1530 D		N09	E30	4152	15 D	1							S-SWF
MT WILSON	18	1725	2015	1744	N22	E05	4151	170	3+							S-SWF
MT WILSON	20	1430	1454 D	1435	N25	W28	4151	24 D	1							
MT WILSON	20	2120	2145	2125	N08	W10	4152	25	1+							S-SWF
MT WILSON	21	1424 E	1454 D	1454	N09	W28	4152	30 D	2+							S-SWF
MT WILSON	21	1424 E	1454 D	1429	N10	W05	4152	30 D	2+							
MT WILSON	21	1952	2001	1954	N24	W31	4151	9	1							Slow S-SWF
MT WILSON	21	2324	2344	2332	N09	W10	4152	20	1							
MT WILSON	24	2012	2018		N12	W54	4152	6	1							Slow S-SWF
MT WILSON	26	1535	1605		N15	E56	4162	30	1							
MT WILSON	26	1918	2202	1957	N23	E09	4159	164	3-							S-SWF

SOLAR FLARES

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
	Sept 1957															
MT WILSON	27	1958	2007 D	2003	S13	W48	4157	9 D	1							
MT WILSON	27	2112	2200	2121	N14	W10	4158	48	1+							Slow S-SWF
MT WILSON	28	2205 E	2221 D	2208	N16	W30	4158	16 D	1							
MT WILSON	28	2205 E	2221 D	2208	N24	W14	4159	16 D	1+							
MT WILSON	30	1505 E	1558	1517	N20	W48	4159	53 D	1							
MT WILSON	30	1700 E	1730	1706	N24	W40	4159	30 D	2-							S-SWF
MT WILSON	30	1746	1800	1748	S16	E50	4167	14	1							
MT WILSON	30	1955	2002	1957	N20	W49	4159	7	1							Slow S-SWF
	Oct. 1957															
MT WILSON	01	1600	1600 D		N16	W15	4162	1 D	1							
MT WILSON	05	1759	1846	1802	S16	E02	4175	47	1+							
MT WILSON	05	2052	2058	2052	S26	W20	4167	6	1							
MT WILSON	05	2209 E	2244	2211	S26	W19	4167	35 D	1							Slow S-SWF
MT WILSON	06	1730 E	1752	1733	N24	W56	4165	22 D	1							
MT WILSON	08	1619	1635 D	1622	N07	E57	4180	16 D	1							
MT WILSON	08	1902	1945 D	1909	N14	W13	4172	43 D	1							
MT WILSON	16	1448	1633 D		S17	W23	4185	105 D	1							
MT WILSON	16	1657 E	1716 D		S26	E19	4189	19 D	1							
MT WILSON	17	1435 E	1507	1440	S25	E10	4189	32 D	1							Slow S-SWF
MT WILSON	17	1720	1740	1721	S24	W01	4189	20	1							Slow S-SWF
MT WILSON	17	1816	1933	1829	S25	E07	4189	77	1							G-SWF
MT WILSON	17	1856	1903	1857	N22	W53	4183	7	1							
MT WILSON	17	2232 E	2234 D		S25	W02	4189	2 D	1							
MT WILSON	18	1459	1549 D	1526	S24	W13	4189	50 D	1							
MT WILSON	19	1916	2006	1925	S25	W20	4189	50	2							S-SWF
MT WILSON	24	1626 E	1632	1629	S29	W90	4189	6 D	1							
MT WILSON	24	2115	2155 D	2123	N14	E12	4197	40 D	1							
MT WILSON	24	2205	2234	2210	N12	E11	4197	29	1							
MT WILSON	25	2158 E	2220 D		N26	E56	4205	22 D	1							
MT WILSON	27	1931 E	2030		N13	W38	4197	59 D	1							Slow S-SWF
MT WILSON	27	2200	2208	2203	S10	W04	4203	8	1							
MT WILSON	29	1533	1553 D	1543	N21	W28	4202	20 D	1							Slow S-SWF
MT WILSON	29	1535	1543 D	1539	S10	W04	4214	8 D	1							
	Nov. 1957															
MT WILSON	10	1941	2148	2050	S22	E32	4236	127	1							

SOLAR FLARES

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
					APPROX.		McMATH									
	Nov. 1957	START	END	MAX. PHASE	LAT.	MER. DIST.	PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
MT WILSON	26	2251	2305	2256	S18	W03	4263	14	1							
MT WILSON	27	1659 E	1705 D	1705	S15	W14	4263	6 D	1+							Slow S-SWF
MT WILSON	28	2111	2142	2123	S14	W30	4263	31	1							
	Dec. 1957															
MT WILSON	01	1636 E	1924	1653	S19	W25	4269	168 D	1							G-SWF
MT WILSON	01	1932	2036	1941	S24	E13	4272	64	1							
MT WILSON	06	1913	1924		S22	W50	4288	11	1							
MT WILSON	07	0000	0030 D		S22	W45	4288	30 D	1+							
MT WILSON	09	1743	1818		N07	W30	4290	35	1+							
MT WILSON	12	1815 E	1859	1815	N15	W40	4294	44 D	1+							Slow S-SWF
MT WILSON	21	2215 E	2230	2218	S14	E24	4318	15 D	1							
MT WILSON	21	2232	2300 D	2251	N23	E51	4324	28 D	2							Slow S-SWF
MT WILSON	24	2004	2027	2005	S06	W55	4313	23	1+							Slow S-SWF
MT WILSON	27	2136	2141 D	2139	S19	W14	4323	5 D	1							
MT WILSON	28	2229	2331	2230	N25	W50	4328	62	2							S-SWF
	Jan. 1958															
MT WILSON	02	2002	2007	2002	N12	E52	4346	5	1							
MT WILSON	04	2129	2246	2152	S15	E30	4348	77	2							
MT WILSON	05	2014	2035	2014	N13	E20	4347	21	1							
MT WILSON	07	1822 E	1939	1834	S17	E36	4356	77 D	1+							S-SWF
MT WILSON	07	1911 E	1934	1922	N12	W00	4347	23 D	1							Slow S-SWF
MT WILSON	09	2306	2332 D	2320	N10	W30	4347	26 D	1							
MT WILSON	11	1725	1737	1728	S15	W02	4355	12	1							
MT WILSON	11	1903	1944	1906	S12	W05	4355	41	1							
MT WILSON	13	1712	1723 D	1723	N26	E03	4359	11 D	1							
MT WILSON	14	2145	2215	2145	S18	W39	4356	30	1+							
MT WILSON	15	1641	1627 D	1642	S12	W60	4355	16 D	2+							S-SWF
MT WILSON	15	2306	2322	2306	N14	E22	4370	16	1							
MT WILSON	16	2300	2347	2306	S15	E46	4377	47	1+							

SOLAR FLARES

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
	Jan. 1958															
MT WILSON	17	2116	2125	2117	N30	E60	4376	9 D	1							
MT WILSON	18	2253	2318	2259	S10	W38	4368	25	1							
MT WILSON	23	1919	2019	1953	S20	W10	4378	60	16							
MT WILSON	23	2119	2159 D	2121	N30	E05	4381	40 D	16							
MT WILSON	30	1904 E	1927 D	1921	S19	W65	4382	23 D	2-							S-SWF
	Mar. 1958															
MT WILSON	24	1614 E			S15	E56	4476		1							
MT WILSON	25	1708	1719	1716	S15	E44	4476	11	1							
MT WILSON	26	1652	1712	1658	N18	E00	4474	20	1							
MT WILSON	26	1754	1805	1757	S08	E06	4476	11	1							
MT WILSON	26	1815	1827	1820	N10	W48	4467	12	1							
	Apr. 1958															
MT WILSON	08	2348 E	2434	2355	N12	E68	4498	46 D	1							
MT WILSON	09	1453 E	1455 D		N11	W42	4490	2 D	16							G-SWF
MT WILSON	09	1455 E			N22	W61	4485		1							
MT WILSON	10	2103	2120	2104	N05	W13	4493	17	1							
MT WILSON	10	2216	2240	2222	N12	W90	4490	24	1							S-SWF
MT WILSON	14	2243 E	2247 D	2245	S19	E85	4508	4 D	1							
MT WILSON	16	2115 E	2121 D	2117	N17	E29	4506	6 D	1							
MT WILSON	18	1500 E	1529	1503	N22	E33	4507	29 D	1							
	May 1958															
MT WILSON	01	1412	1452 D	1417	S15	E14	4530	40 D	1							Slow S-SWF

Mt. Wilson Flare reports for July 1957 to May 1958 inclusive, not included in previous CRPL-F Series, Part B.

The changes in the "Flare Patrol Observations" charts due to the addition of these Mt. Wilson data will be published in a later issue.

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

DECEMBER 1958

Dec. 1958	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F 173B
1	1643	1658	Slow S-SWF	4	1	BE, MC, PR, WS	1615
2	0044	0220	G-SWF	1	3	OK	0054E
2	0928	0955	Slow S-SWf	3	2	NE, PU	0936E
3	0440	0507	Slow S-SWF	1	2-	OK	
3	0703	0723	S-SWF	4	1+	OK, CW++	0701
3	1738	1805	S-SWF	3	1	HU, MC, PR, WS	1725
3	2008	2035	S-SWF	5	2	AD, AN, BE, HU, LA, MC, PR, WS	2005
4	1052	1117	S-SWF	3	2	NE, PU	1040E
6	1946	2015	Slow S-SWF	4	1+	HU, PR, WS	1935
7	1052	1115	S-SWF	3	1+	NE, PU	1106E
9	1255	1310	S-SWF	3	1-	HU, PR	1305E
9	1655	1730	Slow S-SWF	5	2	BE, CO, FM, HU, MC, PR, WS, CW*	1642
9	1800	1820	S-SWF	3	1-	BE, MC, PR, WS	1757
10	0040	0100	Slow S-SWF	1	1+	OK	0034
10	0220	0237	S-SWF	1	1+	OK	0221
11	0058	0118	Slow S-SWF	3	1-	AN, OK	0106E
11	0420	0435	Slow S-SWF	3	1-	AN, OK	
11	0508	0527	Slow S-SWF	1	1-	OK	0510E
11	1122	1144	S-SWF	5	2	NE, SW, CW** ***	1124
11	1520	1545	Slow S-SWF	5	2-	BE, FM, HU, NE, PR, WS, CW*	*
11	1808	1840	S-SWF	5	2+	AN BE, CO, DA, FM, HU, LA, NE, PR, SW, WS, CW*	1800
11	1935	2000	S-SWF	5	2	BE, HU, LA, MC, PR, WS	1930
12	0105	0132	S-SWF	5	2	AD, CA, OK, TO, CW†+	0106E
12	0212	0243	Slow S-SWF	5	2+	CA, OK, TO, CW++	0214E
12	0330	0348	S-SWF	3	1+	CA, OK	0320
12	0645	0728	Slow S-SWF	5	2	CA, NE, OK, CW†+	*
12	1257	1335	S-SWF	5	2	BE, CO, FM, HU, MC, NE, PR, SW, CW* ** ***	1215
12	1458	1512	S-SWF	3	1-	HU, PR, WS	1500
12	2315	2343	Slow S-SWF	4	1	AN, OK	*
13	0022	0055	S-SWF	5	2	AD, CA, HO, OK, TO	0020E
13	1835	1905	S-SWF	5	2	AN, BE, FM, HU, LA, MC, PR, WS	1830
13	2320	0020	S-SWF	4	2	AN, PA	
14	0440	0512	Slow S-SWF	1	2-	OK	0445
16	0417	0440	Slow S-SWF	1	2-	OK	0415E
17	0200	0218	S-SWF	1	1	OK	0207E
17	1858	1915	S-SWF	4	1	BE, HU, MC, PR, WS	1855
18	0435	0445	S-SWF	5	1-	CA, OK, CW++	*
18	1638	1654	Slow S-SWF	4	1-	HU, PR, WS	1635
20	1110	1150	S-SWF	3	-	CW** ***	*
21	0047	0107	Slow S-SWF	4	2-	AD, CA, OK	0046
21	0617	0640	S-SWF	5	2-	NE, OK	
21	1423	1455	Slow S-SWF	5	2-	BE, HU, MC, NE, PR	1422E
21	1855	1922	G-SWF	3	1	MC, PR, WS	*
22	0410	0500	Slow S-SWF	1	2	OK	
22	1500	1600	G-SWF	4	2	HU, MC, PR, WS	1456
23	0540	0653	G-SWF	4	3-	OK, CW†+	0545E
24	0100	0112	S-SWF	1	1-	OK	0057E
24	0943	1000	S-SWF	3	1	NE, CW**	
24	1530	1605	Slow S-SWF	3	1	HU, PR	1534E
25	1936	1949	S-SWF	4	1+	HU, MC, PR, WS	1935
28	1337	1400	S-SWF	5	2	HU, MC, PR, PU	1305
31	1700	1736	S-SWF	5	2+	BE, CO, FM, HU, LA, MC, NE, PR, WS, CW*	1656

*No known flare patrol.

CA = Canberra, Australia
CO = Cornell University, Ithaca, N.Y.
DA = Darmstadt, G.F.R.
HO = Hollandia, New Guinea
LA = Los Angeles, Calif.
NE = Nederhorst den Berg, Netherlands
PA = Paramaribo, Dutch Guiana
PU = Prague, Czechoslovakia

SW = Enkoping, Sweden
TO = Hiraiso Radio Wave Observatory, Japan
CW* = Cable and Wireless, Barbadoes
CW** = Cable and Wireless, Somerton, England
CW*** = Cable and Wireless, Brentwood, England
CW+ = Cable and Wireless, Hong Kong
CW++ = Cable and Wireless, Singapore.

IONOSPHERIC EFFECTS OF SOLAR FLARES

(Sudden Cosmic Noise Absorption
Sudden Enhancements Of Atmospherics
Solar Noise Bursts At 18 Mc.)

JUNE 1958

DATE	CLASS SCNA	CLASS SEA	CLASS Burst	WIDESPREAD INDEX	TIME (UNIVERSAL TIME) BEGIN	MAX.	END	PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
1			1	5	1933	1935	2008		BO, MC, SP
2		1		5	0700		0729		HO, KU, NU
2	1-			3	1950	1957	2008	10	BO, MC, RE
2		2-		5	1950		2010		A3, BO, MC, PA
3		-		3	1327	1348	1444		DU, ED
3	1+			5	1510	1513	1537	30	BO, ED, MC, RE, SP
3		2+		5	1511	1517	1639		A2, BO, ED, KU, NE, NU, PA, SP
3			1	5	1713	1714	1715		BO, MC, SP
3	1			4	1928	1935	2003	15	RE, SP
3			1+	5	2053	2055	2057		BO, MC, RE, SP
4			2+	5	1809	1814	1817		BO, MC, RE, SP
4			1	5	2036		2045		BO, MC, RE
4		2		3	2130	2152	2152D		BO, MC
4			3	5	2139	2150	2153		BO, MC, RE, SP
4	1			5	2153	2157	2200	15	BO, MC, RE, SP
4		1		1	2155	2205	2210		SP
5		2		4	0843	0850	0940		DU, ED, KU, NE, NU
5	-			1	0845	0854	0910		ED
5			1	5	1622	1624	1625		MC, RE, SP
5		1		5	1622	1631	1652		A4, BO, DE, DU, ED, KU, NE, NU, PA, SP
5	2+			5	1624	1630	1645		BO, ED, MC, RE, SP
5			3	5	1718	1723	1728		BO, MC, RE, SP
5	1-			3	1728	1731	1752	15	BO, MC
5			2	3	2223	2226	2228		MC, SP
6		2		5	0438		0600		HO, KU
7		1-		3	1000		1030		KU, NU
7		1		4	1607		1626		A1, HO
8		1-		3	0853		0918		KU, NU
8			2	5	1649	1651	1654		MC, RE, SP
8		2-		5	1749	1755	1805		A1, BO, DE, ED, NE, NU, SP
8	2			5	1750	1753	1810		BO, MC, RE, SP
8			1+	3	1828	1835	1836		RE, SP
8		1+		3	1845	1905	2000		A1, A3, A4
8			2	3	2251	2254	2256		RE, SP
8		1+		4	2307		2349		A3, HO
9		1		3	0908	0925	0953		ED, KU, NE, NU
9		1-		1	1010U		1038		NU
10		1-		1	0548		0558		KU
10		1-		3	1723	1730	1741		A3, BO
10	1-			1	1723	1728	1735	7	BO
10	1			3	2353	2359	2409	10	BO, SP
10		1		4	2353	2359	2410		BO, HO, SP
11		2		1	0231		0300		HO
11	1			5	1234	1240	1256	20	ED, MC, RE
11		1+		5	1237	1250	1305		DE, DU, ED, KU, MC, NE, NU, PA
11	1-			5	1306	1310	1330	10	ED, MC, RE
11		1		5	1306	1313	1351		A3, DE, DU, ED, KU, MC, NE, PA
11		1-		1	1511		1526		KU
11		1+		5	1608	1617	1657		DU, ED, KU, NE, NU, PA
11	2-			4	2038	2042	2107	30	BO, MC, RE, SP
11		2		4	2039	2045	2103		BO, PA, SP
11			1+	5	2054	2055	2056		MC, RE, SP
12		1		4	1430		1500		A3, KU, NU
13		1		5	0705		0733		HO, KU, NE
13	1-			4	1714	1717	1730	15	BO, MC
13		1		4	1716	1722	1750		BO, ED, KU, NU
14	-			1	1121	1130	1140		ED
14		1		4	1121	1129	1228		DU, ED, KU, NE, NU, PA
14	1-			4	1715U	1720	1800U		BO, RE
14		2		3	2114	2135	2210		BO, DE
14	1+			4	2115	2119	2130	20	BO, RE, SP
15	1-			4	1349	1404	1420		ED, RE
15		1+		5	1353	1404	1447		A2, A3, BO, DU, ED, KU, NE, NU, PA

IONOSPHERIC EFFECTS OF SOLAR FLARES

(Sudden Cosmic Noise Absorption
Sudden Enhancements Of Atmospherics
Solar Noise Bursts At 18 Mc.)

JUNE 1958

DATE	CLASS			WIDESPREAD INDEX	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
15			1	3	1825	1827	1829		RE, SP
15		1+		3	1830	1840			A3, A4, BO
15	1-			4	1829	1839U	1915U		BO, RE
16			1+	3	1619	1620	1622		RE, SP
18			1+	5	1922	1925	1926		BO, MC, RE, SP
18	1-			1	2348	2354	2359	7	BO
18		1-		1	2350	2352	2359		BO
19		1		1	0219		0253		HO
19		1		3	0732		0757		KU, NE, NU
19		1		4	0945		-		ED, KU, NE, NU
19		2		4	1002		1050		DU, ED, KU, NE, NU
19	-			1	0951	1021	1039		ED
19		1+		3	1128		1150		KU, NE, NU
19		2		5	1258	1300	1350		A1,A3,BO,DE,DU,KU,NE,NU,PA
19	2			5	1437	1445	1500	50	BO, ED, MC, SP
19		2+		5	1437	1450	1520		A1,A2,A3,BO,DE,DU,ED,KU,MC,NE,NU, PA,SP
19		2		1	1848 •	1859			A1
20		3		1	0340		0510		HO
21			1+	5	2033	2036	2038		BO, MC, SP
23		1-		1	0713		0728		KU
23		1-		1	0803		0818		KU
23		1-		1	1302		1332		KU
23		1-		1	1349		1419		KU
23		1		1	1714		1744		PA
23			1+	5	1756	1758	1800		BO, MC, SP
23			1-	3	1829	1830	1830		BO, SP
23			1-	3	2004	2005	2005		BO, SP
25			1	3	1744	1745	1746		MC, SP
26			1+	5	1548	1551	1552		BO, MC, SP
27			1	3	1808	1809	1810		MC, SP
27			1	5	1836	1837	1838		BO, MC, SP
28		1-		1	0902		0922		KU
28			1	3	1735		1802		BO, MC
28			2	5	1845	1847	1849		BO, MC, SP
29		1-		4	1317	1338	1501		DU, KU, NU
29	1			3	2025	2027	2038	30	BO, MC, SP
29		2		5	2028	2035	2055		A1, A2, A4, BO, DE, MC, SP
30		1-		1	0616		0636		KU
30			1	3	2106	2107	2108		MC, SP

SOLAR RADIO EMISSION
DAILY DATA

JANUARY 1959

Washington,D.C. — 9530 Mc.

Day	Flux	Day	Flux	Day	Flux
1		11		21	323
2	252	12	272	22	378
3		13	256	23	386
4		14	256	24	433
5	229	15	232	25	
6	307	16	256	26	410
7	299	17		27	355
8	299	18		28	311
9	299	19	288	29	339
10		20	299	30	309
				31	335

OUTSTANDING OCCURRENCES

Jan. 1959	Type	IAU	Start UT	Duration Hrs.Mins	Maximum Time UT	Peak Flux	Observing Period UT	Remarks
2	Simple		1420	Ind	Ind	12	1400-2130	
	Simple 2	SD	1517.0	8.7	1519.7	30		
	Complex	CD	1545	Ind	Ind	22		
	Simple 2	ESD	1920.3	1.1	1920.7	14		
5							1400-2130	
6							1400-2130	
7							1340-2130	
8							1345-2140	
9							1355-2130	
12	Group (2)		1451.1	3.4			1240-2130	
	Simple 1	ESD	1451.1	0.8	1451.4	7		
	Simple 1	ESD	1452.9	1.6	1453.4	8		
13	Simple 2	SD	1633.7	1.3	1634.1	32	1245-2130	
	Simple 2	ESD	2123.6	2.8	2123.9	27		
14	Complex	CA	1405.8	22.3	1408.5	7	1240-2130	
15	Simple 2	ESD	2007.0	2.0	2008.2	18	1235-2120	
16							1340-2135	
19	Simple 2	SD	1731.0	1.3	1731.6	36	1230-2130	
	Simple 2	ESD	1920.2	1.6	1920.6	14		
	Simple 2	SD	1934.8	3.6	1936.1	14		
20	Simple 1	SD	2005.0	1.4	2005.8	6	1230-2135	
21	Complex	CD	Ind	≃ 18.0	1706.9	1438	1230-2125	
	Complex		Ind	Ind	1840.7	24		
	Complex	CD	2110.7	4.4	2111.6	67		
22	Complex	CD	1545.8	15.0	1547.2	410	1235-2130	
	Complex	CD	2027.0	10.2	2028.5	465		
	Complex	CA	2056.4	> 35.0	2057.2	443		
23	Group (4)		1816.4	19.8			1240-2120	
	Simple 2	ESD	1816.4	0.5	1816.7	18		
	Simple 2	SD	1822.2	3.9	1823.1	95		
	Simple 2	ESD	1835.6	0.3	1835.8	57		
	Simple 2	ESD	1835.9	0.3	1836.0	53		
24	Simple 2	SD	1358.2	1.0	1358.8	20	1331-2120	
	Complex	CD	1456.6	0.5	1456.7	47		
	Complex	CD	1513.9	56.0	1536.5	37		
	Complex	CD	1815.1	1 06.0	1818.1	12		
	Complex	CD	2018.8	17.0	2022.7	120		
26	Complex	CD	1713.0	35.0	1739.6	41	1230-2130	
27	Simple 2	SD	1318.8	1.5	1319.8	12	1230-2145	
	Simple 2	ESD	1323.9	1.8	1324.2	14		
	Complex	CA	1420.0	28.0	1430.0	860		
	Simple 2	ESD	1929.5	0.5	1929.6	20		
	Simple 3 af	SD	1940.1	3.0	1941.9	28		
	Simple 2	ESD	1941.0	0.1	1941.05	30		
	Group (2)		2043.3	6.5				
	Simple 2	SD	2043.3	2.5	2044.5	12		
	Simple 2	SD	2047.0	2.8	2047.6	39		
28	Complex	CD	Ind	Ind	1936.8	67	1230-2135	
29	Complex	CD	1434.7	5.7	1439.1	12	1230-2145	
30							1230-2127	
31							1345-1918	

SOLAR RADIO EMISSION
DAILY DATA

APRIL 1958

Washington,D.C. 9530 Mc.

Day	Flux	Day	Flux	Day	Flux
1	290	11	270	21	268
2	278	12		22	252
3	268	13		23	246
4	258	14	246	24	256
5		15	240	25	270
6		16	254	26	268
7		17	244	27	
8	268	18	246	28	307
9		19		29	296
10	278	20		30	284

OUTSTANDING OCCURRENCES

Apr. 1958	Type	IAU	Start UT	Duration Hrs.Mins	Maximum Time UT	Peak Flux	Observing Period UT	Remarks
1	Simple 3	SD	1411.9	13.2	1413.3	138	1330-2130	
	Complex	CD	1632.3	2.6	1633.9	166		
	Post Inc		1634.9	7.3		22		
	Simple 2 f	SD	1808.7	2.6	1809.8	53		
2	Simple 3A	CA	1530.0	49.0	Ind	12	1337-2135	
	Complex		1539.0	21.5	1540.3	99		
	Complex	CD	1724.8	1.2	1726.3	21		
	Simple 2f	SD	1805.3	8.2	1808.8	138		
	Post Inc		1813.5	19.5		22		
	Complex	CD	1951.7	6.0	1952.8	292		
	Post Inc		1957.7	4.0		15		
3	Simple 3	SD	1820.8	2 45.0	1854.5	13	1350-2135	
4	Group (2)	F	1920.9	4.1			1338-2135	
	Simple 2		1920.9	1.1	1921.1	38		
	Simple 2		1924.7	0.3	1924.9	12		
	Simple 2	SD	1938.6	1.7	1940.2	16		
7							1418-2138	
8							1450-2130	
10	Simple 3	SD	1617.5	9.0	Ind	10	1337-1940	
11	Simple 3	SD	1554.6	13.0	1555.2	21	1350-2125	
14							1416-2145	
15	Simple 1	SD	1628.4	0.5	1628.6	7	1352-2130	
16							1345-2135	
17							1339-2121	
18							1335-1736	
21							1442-2054	
22							1541-2119	
23							1619-2130	
24							1355-2150	
25							1350-2142	
26							1159-2042	
28							1402-2102	
29							2059-2110	
30	Group (2)	F	Ind	Ind			1240-2114	
	Simple		Ind	Ind	1840.4	31		
	Simple 2		1847.2	2.2	1847.9	19		
	Simple 3 f	SD	1928.1	21.2	1930.7	63		

SOLAR RADIO EMISSION
DAILY DATA

JANUARY 1959

Washington,D.C. — 3200 Mc.

Day	Flux	Day	Flux	Day	Flux
1		11		21	289
2	219	12	226	22	289
3		13	207	23	266
4		14	193	24	289
5	259	15	168	25	
6	266	16	180	26	289
7	232	17		27	245
8	238	18		28	236
9	238	19	219	29	219
10		20	259	30	196
				31	180

OUTSTANDING OCCURRENCES

Jan. 1959	Type	IAU	Start UT	Duration Hrs.Mins	Maximum Time UT	Peak Flux	Observing Period UT	Remarks
2	Simple 2	SD	1422.0	10.7	1426.7	15	1400-2130	
	Simple 2	SD	1518.0	7.7	1519.9	35		
	Complex	CD	1548.7	21.3	1552.9	25		
	Simple 2	ESD	1920.2	1.7	1920.8	23		
5							1400-2130	
6							1400-2130	
7	Simple 2	SD	1457.6	8.1	1500.7	17	1340-2130	
8							1345-2140	
9							1355-2130	
12	Group (3)		1446.8	11.7			1240-2130	
	Complex	CD	1446.8	1.5	1447.8	22		
	Simple 2	SD	1450.5	1.6	1451.4	13		
	Simple 2	SD	1452.4	6.1	1453.6	18		
13	Simple 2	SD	2123.6	5.4	2123.9	22	1245-2130	
14	Complex	CD	1405.8	21.0	1408.2	86	1240-2130	
15							1235-2120	
16							1340-2135	
19	Simple 2	ESD	1731.1	3.0	1731.8	18	1230-2130	
20	Simple 2	SD	2004.1	3.0	2005.8	17	1230-2135	
21	Complex	CD	1701.0	18.0	1707.3	779	1230-2125	
	Complex	CD	1838.1	6.2	1839.1	28		
22	Group (2)		1546.1	18.3			1235-2130	
	Complex	CD	1546.1	3.7	1547.2	114		
	Complex	CD	1554.1	10.3	1554.3	35		
	Complex	CD	1820.4	9.4	1823.3	16		
	Complex	CD	2027.8	11.1	2028.2	106		
	Complex	CD	2056.4	>35.0	2057.2	170		
23	Complex	CD	1822.1	3.7	1823.2	6	1240-2120	
24	Complex	CD	1456.6	0.7	1456.7	37	1331-2120	
	Simple 2	ESD	1536.3	7.7	1536.6	44		
	Complex	CD	1815.1	6.5	1818.0	12		
	Simple 3	SD	1834.9	10.5	1840.2	51		
26	Complex	CD	1735.0	15.0	1739.6	18	1230-2130	
27	Simple 2	SD	1318.2	3.1	1319.6	37	1230-2145	
	Simple 2	SD	1323.9	2.0	1324.2	14		
	Complex	CA	1420.0	28.0	1430.1	144		
	Simple 2	SD	1757.0	3.0	1759.0	25		
	Complex	CD	1940.1	3.0	1941.9	22		
	Group (2)		2043.3	6.5				
	Simple 2	SD	2043.3	2.5	2044.9	30		
	Simple 2	SD	2047.0	2.8	2047.9	41		
28	Complex		Ind	Ind	1937.2	32	1230-2135	
29	Group (2)		1435.8	4.6			1230-2145	
	Simple 2	ESD	1435.8	1.3	1436.0	10		
	Complex	CD	1438.5	1.9	1438.8	27		
30							1230-2127	
31							1345-1918	

SOLAR RADIO EMISSION
DAILY DATA

APRIL 1958

Washington,D.C. 3200 Mc.

Day	Flux	Day	Flux	Day	Flux
1	301	11	198	21	198
2	298	12		22	212
3	263	13		23	217
4	261	14	154	24	210
5		15	166	25	221
6		16	174	26	219
7	257	17	176	27	
8	249	18	180	28	229
9		19		29	247
10	233	20		30	242

OUTSTANDING OCCURRENCES

Apr. 1958	Type	IAU	Start UT	Duration Hrs.Mins	Maximum Time UT	Maximum Peak Flux	Observing Period UT	Remarks
1	Simple 2	SD	1411.9	13.1	1413.5	194	1330-2130	
	Simple 1	SD	1537.5	3.5	1538.5	11		
	Simple 2 f	SD	1632.5	5.2	1634.0	24		
	Simple 2	SD	1808.8	6.0	1810.0	53		
2	Ind		Ind	Ind	1355.0	Ind	1337-2135	
	Ind		Ind	Ind	1425.8	Ind		
	Simple 1	ESD	1531.2	2.8	1531.8	10		
	Complex	CD	1539.9	6.8	1544.5	57		
	Simple 2 f	ESD	1725.9	1.4	1726.4	60		
	Post Inc		1727.3	6.0		11		
	Simple 2 f	SD	1805.3	8.2	1808.8	121		
	Post Inc		1813.5	11.5		18		
	Complex	CD	1951.8	6.4	1953.2	212		
	Post Inc		1958.2	9.5		11		
	Simple 1	SD	2042.5	4.0	2044.0	5		
3	Simple 1	SD	1611.0	2.5	1612.0	9	1350-2135	
	Simple 1	SD	1744.3	6.0	1748.5	7		
	Simple 3	SA	1831.3	1 30.0	1838.3	16		
4	Group (2)	F	1920.6	5.2			1338-2135	
	Simple 2		1920.6	1.3	1921.1	42		
	Simple 2 f		1924.0	1.8	1924.9	22		
7	Simple 2	SD	2031.5	5.0	2034.0	10	1418-2138	
8							1348-2130	
10	Simple 3 f	SD	1617.0	7.0	1618.4	18	1337-1940	
11	Group (2)	F	1554.6	9.2			1350-2125	
	Simple 2		1554.6	4.0	1555.2	16		
	Simple 2		1600.3	3.5	1601.1	9		
14							1416-2145	
15	Simple 2	SD	1628.3	0.8	1628.6	9	1352-2130	
16							1345-2135	
17							1339-2118	
18	Group (2)		1732.6	0.7			1335-1952	
	Simple 2	ESD	1732.6	0.1	1732.7	45		
	Simple 2	ESD	1732.9	0.4	1733.1	89		
21	Complex	CD	2049.4	4.0	2050.2	18	1442-2054	
22							1541-2119	
23	Simple 3	SD	1852.9	9.0	1857.3	14	1614-2130	
24							1355-2150	
25							1350-2142	
26							1159-2042	
28							1402-2104	
29	Simple 2	SD	1448.5	0.5	1448.7	10	1430-2110	
	Simple 2	ESD	1548.9	1.1	1549.0	21		
	Simple 1	SD	1654.3	0.6	1654.7	2		
	Simple 1	ESD	1849.9	0.3	1850.0	5		
	Simple 3	SD	1954.7	Ind	2011.7	12		
30	Simple 1	SD	1714.8	1.3	1715.2	3	1240-2114	
	Group (2)	F	1839.0	13.2				
	Simple 2		1839.0	3.0	1840.5	11		
	Simple 1		1846.7	5.5	1848.1	6		
	Simple 3	SD	1928.4	22.5	1931.0	16		

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

JANUARY 1959

Ottawa **2800 Mc.**

	Type*	Start UT	Duration Hrs:Mins	Maximum Time UT	Maximum Peak Flux	Remarks
1	2 Simple 2	1501.2	1.5	1501.5	35	
1	2 Simple 2	1645.5	4.5	1648	10	
2	2 Simple 2 f	1424.3	4	1425.3	10	
2	2 Simple 2	1518	6	1519.8	30	
2	2 Simple 2	1920	2.5	1920.5	20	
3	7 Period Irregular Activity	1550	1 30	1651.5	225	
4	2 Simple 2	1722.5	2.5	1723.5	9	
8	3 Simple 3	1628	11	1631	9	
8	6 Complex	1935	3	1937.5	13	Doubtful
10	6 Complex	1531.8	1	1532	30	
11	2 Simple 2 f	1947.5	5	1950	35	
	4 Post Increase		50		10	
14	6 Complex	1407	18	1409	65	
14	6 Complex	1737	5	1739.7	25	
14	3 Simple 3	1935	30	1950	8	
14	3 Simple 3	2025	30	2039	42	
14	- Records incomplete	2130	15	indet.	2000	In sunset
17	3 Simple 3	1704	30	1710	7	
19	8 Group (2)	1614.5	4.5			
	2 Simple 2	1614.5	1.5	1615	14	Doubtful
	2 Simple 2	1616	3	1617	10	
20	2 Simple 2	2005	2.5	2006	12	
21	2 Simple 2	1358.7	1	1359	30	
21	2 Simple 2 f	1648.8	2	1649	16	
21	2 Simple 2 f	1701.5	11.5	1707.5	600	
	4 Post Increase f		15		25	
21	2 Simple 2 f	1839	2	1840	25	
22	2 Simple 2	1553.8	3	1554.4	25	
22	8 Group (2)	1815.5	9.5			
	1 Simple 1	1815.5	1.5	1816	7	
	2 Simple 2	1822	3	1823	9	
22	2 Simple 2 f	2027.7	4	2028.2	125	
22	2 Simple 2 f	2056.5	3	2057.5	145	
23	2 Simple 2	1422	1	1422.4	9	
23	2 Simple 2 f	1607.8	2	1608.5	9	
23	2 Simple 2	1822.7	0.8	1823	9	
23	3 Simple 3	1950	1 40	2045	25	
24	3 Simple 3 A	1500	2	indet.	25	
	2 Simple 2	1535	6	1537	35	
24	2 Simple 2	1815	4	1817	11	
24	1 Simple 1	2050.5	3.5	2052	6	
25	3 Simple 3 f A	1407.5	6 20	indet.	40	
	8 Group (2)	1407.5	52.5			
	9 Precursor	1407.5	3.7		20	
	2 Simple 2	1411.2	9	1412.4	325	
	6 Complex f	1422	38	1440	110	
	6 Complex	2003.7	4	2004	28	
26	3 Simple 3 A	1734	20	1739.5	10	
	2 Simple 2	1734.8	1	1735.2	10	
27	2 Simple 2	1428	7	1430.5	120	
	4 Post Increase		25		20	
27	3 Simple 3	1632	10	1635.5	10	
27	1 Simple 1	1734.5	3	1735.5	7	
27	2 Simple 2	1757	7	1759	14	
27	6 Complex	1856.3	6.5	1859.3	18	
27	2 Simple 2	1940	3	1941.2	27	
27	8 Group (2)	2043.3	6.9			
	2 Simple 2	2043.3	2.5	2044.5	25	
	2 Simple 2	2047.2	3	2047.8	32	
28	1 Simple 1	1505	3	1506	5	
	1 Simple 1	1623.5	3.5	1624.5	7	
28	3 Simple 3 A	1932	30	indet.	6	
	2 Simple 2	1936.4	3	1937.2	20	
29	2 Simple 2 f	1438	3	1438.5	40	
29	3 Simple 3	1630	1 15	1655	10	
31	3 Simple 3	1440	30	1443	10	
31	1 Simple 1	1831	2	1831.8	6	

SOLAR RADIO EMISSION

DAILY DATA

OCTOBER 1958

BOULDER 167 MC

Oct. 1958	Flux Density $10^{-22}w\ m^{-2}(c/s)^{-1}$ Hours UT 0-3	12-15	15-18	18-21	21-24	Day	Variability 0 to 3 Hours UT 0-3	12-15	15-18	18-21	21-24	Day	Observing Periods Hours UT
1	-	-	19	19	18	19	-	0S	0S	1S	0S	0S	12.9 - 00.4
2	-	-	23	25	23	24	-	2	2S	2S	2S	2S	13.0 - 00.3
3	-	-	20	23	28	24	-	-	0S	1S	0S	0S	13.0 - 13.8; 16.0 - 00.3
4	-	-	19	19	17	19	-	0	0S	2S	2S	2S	13.0 - 00.3
5	-	-	17	17	16	17	-	0	0	0	0	0	13.0 - 00.3
6	-	-	19	19	30	21	-	0	0S	2S	2S	2S	13.1 - 20.0; 20.4 - 23.8
7	-	-	-	-	-	-	-	-	-	-	-	-	- - - - - -
8	-	-	-	-	-	-	-	-	-	-	-	-	- - - - - -
9	-	-	15	15	15	15	-	1S	0	0S	0S	0S	13.3 - 00.2
10	-	-	16	16	16	16	-	1	0	0	0S	0	13.2 - 00.2
11	-	-	14	14	15	14	-	1	0	1	0S	1	13.2 - 00.2
12	-	-	16	16	14	15	-	0S	1	1S	2S	1S	13.2 - 18.4; 18.8 - 00.1
13	-	-	15	15	-	15	-	1S	1S	1S	-	1S	13.2 - 18.0; 18.3 - 22.0
14	-	-	14	15	13	14	-	0	0S	0S	0S	0S	13.2 - 18.8; 20.0 - 00.1
15	-	-	15	15	17	15	-	0	0S	2S	0S	0S	13.2 - 15.8; 16.2 - 00.1
16	-	-	-	14	13	15	-	0	-	1S	0S	0S	13.3 - 16.9; 18.7 - 24.0
17	-	-	21	20	20	20	-	-	1	1S	0S	1S	14.6 - 24.0
18	-	-	30	29	32	30	-	-	2S	2S	2S	2S	14.2 - 24.0
19	-	-	26	84	49	50	-	2	2	2	1S	2	13.3 - 24.0
20	-	-	19	20	26	22	-	2S	1S	2S	2S	2S	13.3 - 23.9
21	-	-	21	24	51	28	-	0S	0S	0S	1S	0S	13.3 - 24.0
22	-	-	21	21	21	21	-	3	2	2	2S	2	13.3 - 23.9
23	-	-	21	22	22	22	-	0S	2	2S	1S	2S	13.3 - 23.8
24	-	-	31	21	20	26	-	2	2	1S	1S	2	13.4 - 23.8
25	-	-	20	21	21	21	-	0	0S	0S	0S	0S	13.4 - 22.5
26	-	-	-	-	-	-	-	-	-	-	-	-	- - - - - -
27	-	-	28	54	69	48	-	-	2	2S	1S	2S	14.7 - 23.8
28	-	-	287	314	387	315	-	1	2	1	1S	1S	13.4 - 23.8
29	-	-	358	283	194	297	-	2	2	2	2	2	13.5 - 23.8
30	-	-	43	27	28	35	-	2S	2S	2	1S	2S	13.5 - 23.8
31	-	-	20	24	21	21	-	2	2S	2S	1S	2S	13.5 - 23.7

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

OCTOBER 1958

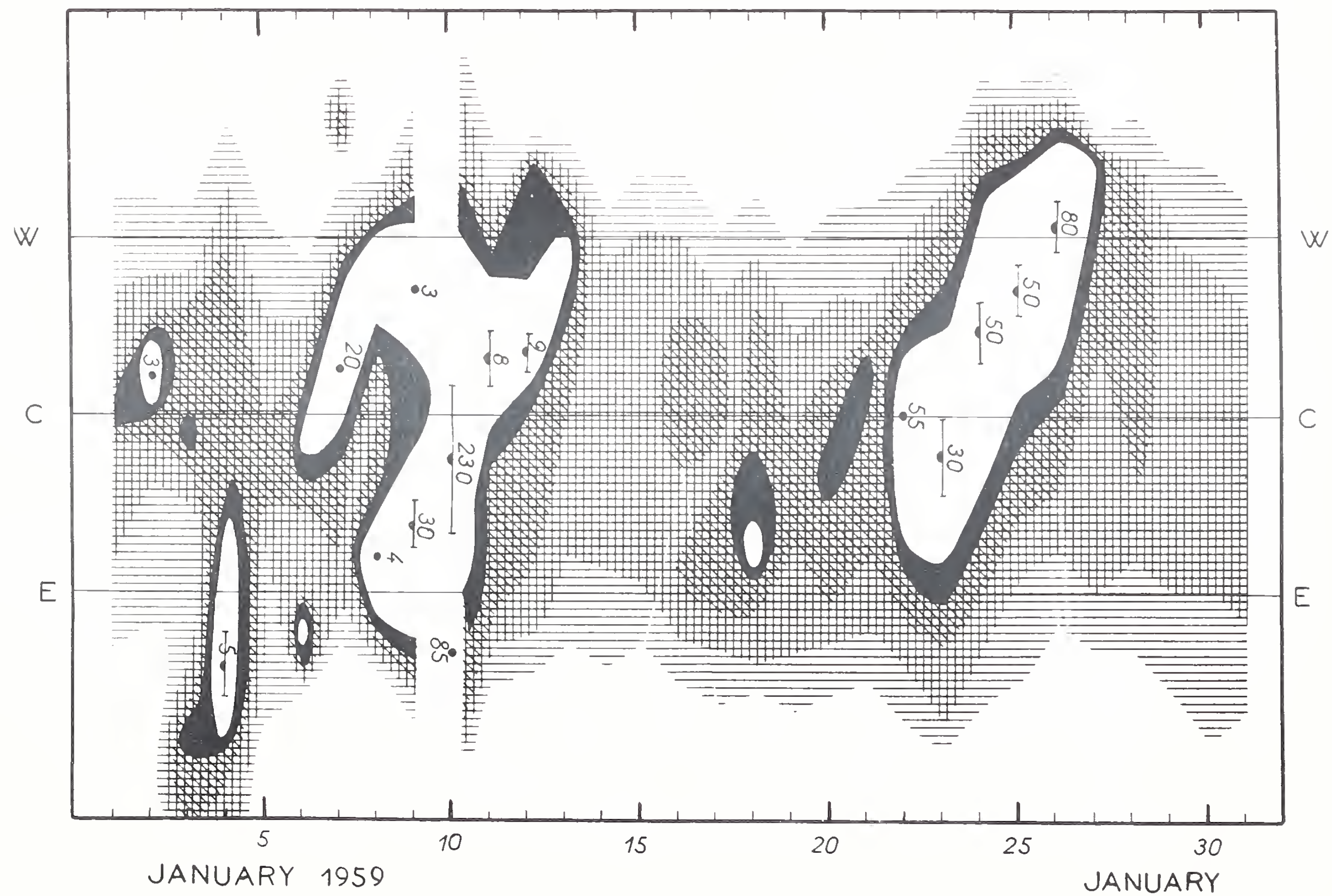
BOULDER 167 MC

Oct. 1958	Type Ap.J	Start UT	Time of Maximum	Duration Minutes	Type IAU	Max. Flux Density $10^{-22}w\ m^{-2}(c/s)^{-1}$ Inst.	Smooth	Remarks
1	3	2032.6	2032.7	0.3	ESD	400	-	
1	3	2034.8	2035.0	0.8	ECD	160	-	
2	6	1300 B	1631.0	680 D	CA	580	10	S
2	2	1351	1357.0	8	CD	340	12	N2
2	3	1700.4	1700.8	0.9	ESD	1200	-	
2	8	1816	1835.0	20	CD	160	-	I 1826-1829
2	8	1944	1949.1	9	ECD	530	130	
2	8	2142	2143.7	5	ECD	1500	290	
2	3	2302.6	2303.2	1.7	ECD	300 X	75 X	
3	1	1615 X	1922.9	545 D	MF	320	-	S,I 1345-1600
4	1	1932	1942.1	148 X	MF	110	-	
4	3	2205.9	2206.8	1.7	ESD	1000	400	
6	3	1844.2	1844.4	1.4	ESD	140	-	S,I 2000-2023,Burst 1801.4
6	1	2023 B	2219.2	207 D	MF	2800 D	-	S
9	3	1453.9	1454.1	0.9	ESD	420	-	
10	3	1416.6	1417.3	0.9	ESD	110	-	
12	3	1647.3	1647.7	0.6	ESD	90	-	
12	2	1653.3	1654.9	2.2	ECD	150	-	
12	2	2013.9	2013.9	2.7	ECD	560	-	S,I 1825-1850
12	3	2242.2	2242.9	1.2	ESD	1100	-	
13	3	1910.0	1910.0	0.5	ESD	940	-	S,I 1800-1820, N3
15	3	1800.3	1800.4	0.4	ESD	800	-	S,I 1548-1610
15	8	1901.6	1901.8	2.2	ECD	1200	390	
15	8	2000.2	2001.0	1.6	ECD	1300	480	
15	8	2046.8	2047.1	1.4	ECD	560	150	
17	3	1703.4	1703.4	1.2	ECD	280	-	
17	3	1910.4	1910.5	0.4	ESD	450	-	
18	6	1410 B	1705.7	590 D	CA	250	17	
19	6	1320 B	1923.6	640 D	CA	450	69	
19	3	1441.8	1442.1	1.0	ECD	2600 D	-	N4
20	1	1320 B	1657.3	635 D	MF	160	-	S
20	8	1914.3	1915.1	1.2	ECD	2600 D	-	
20	8	1919.5	1919.6	1.6	ECD	780	-	
21	6	2000 X	2159	240 D	CA	180	36	S
21	9a	2328.5I	2331 X	7 X	ECD	1700 D	-	I 2326-2328, N5
21	9b	2336	Note 6	24	CD	1700 D	-	
22	1	1320 B	1736.2	635 D	MF	2600 D	-	
22	3	1432.2	1432.9	1.2	ECD	460	39	
22	8	1445.4	1445.7	4.0	ECD	2300 D	590	
22	2	1557	1558.9	6.0	ECD	880	150	
22	3	1909	1909.4	2.0	ECD	2300 D	-	
22	8	1923	1924.5X	3.0X	ECD	2300 D	570	I 1926-1929
22	3	2049	2049.1	1.0	ESD	810	-	Large burst 2341.1
23	1	1320 B	1825.5	630 D	MF	630	-	I 1826-1829, N7
23	8	1729.3	1730.5	4.5	ESD	2800 D	-	I 1726-1729
23	9a	1831.5	1835.5	5.5	ECD	190	44	
23	9b	1837.5	1840.0	4.5	ECD	660	160	
24	1	1325 B	1432.8	83 D	MF	400	-	
24	9	1448	Note 8	59	CD	930	210	
24	3	1643.3	1645.0	1.9	ECD	2300 D	-	
27	6	1440 B	2006.6	550 D	CA	3000 D	54	
27	3	1541.9	1543.0	1.5	ECD	740	-	
28	6	1324 B	1956.8	626 D	CA	4300 D	360	
29	6	1330 B	1507.8	615 D	CA	3300 D	350	
30	6	1330 B	1544.2	615 D	CA	2400 D	33	
30	2	1837	1838.0	2	ECD	1400	-	
31	1	1330 B	1918.4	610 D	MF	450	-	N9

Notes:
1. Interference may occasionally obscure or be mistaken for solar events.
2. October 2, burst 1541.1, large bursts 1712.3, 2241.8, 2411.2.
3. October 13, bursts 1432.1, 1642.0.
4. October 19, large bursts 1444.5, 1445.1.
5. October 21, event 9a maximum occurred sometime between 2330.9 and 2332.2.
6. October 21, maximum of 9b could have occurred during the following periods: 2345-2346, 2348-2351, 2355-2356.
7. October 23, maximum of the series at 1825.5 could probably be a part of the 9a outstanding event. It was followed immediately by the calibration for the period.
8. October 24, maximum of this occurrence could have been either 1501.3 or 1507.0.
9. October 31, large bursts 1337.0, 1339.3.

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

Nançay 169 Mc



SOLAR RADIO EMISSION
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Fort Davis — 100-580 Mc.

Date and Observing Times (U.T.) 1958	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified				Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Act	Time	Int	Act	Time	Int	
June 1											
0000-0145				Uncl.	b	1745	1	b	0022	1	
1233-2400				Uncl.	b	1757	1	g	0024	3	
				Uncl.	b	1827	1	b	1331	1-	
				Uncl.	g	2330-31	2	g	1730	2	
								g	1743	2	
								g	1808	1-	
								b	1819	1-	
								b	1934	1-	
								b	1941	3	
								g	1948-50	1	
								g	1951	2	
								g	2126-27	2	
								g	2132	2	
								b	2135	2	
								g	2251-52	2	
								g	2325	1	
June 2											
0000-0145				Uncl.	g	0021	1	g	0042-0046	1	
1232-2400				Uncl.	g	1703-04	1	b	0135	2	
				Uncl.	b	2252	1-	g	1418-19	2	
								g	1549-50	1	
								b	2251	1	
June 3											
0000-0144				Uncl.	b	1815	1-				
1218-2400											
June 4											
0000-0145	Cont.	0047-48	1								
1218-2400		1842	1	Uncl.	g	1835	1-	g	1324	1-	
	Cont.	2037	2	Uncl.		2149	3	G	1811-12	1	
	Cont.	2142-43	1-								
	Cont.	2143-45	2					b	2144	2	
	Cont. IV	2148-53	3					G	2147-51	2	
	Cont. IV	2153-59	2					b	2152	3	
	Cont. IV	2159-2203	3								
	Cont. IV	2203-2205	2								
	Cont. IV	2205-2209	1								
June 5											
0000-0145				Uncl.		1621.2-29	3	b	0101	1-	1621.2-29. This
1218-2400								g	1256	2	uncl. burst has
								g	1357	1	many features of
								g	2127-28	2	a II burst.
June 6											
0000-0145		1222 →	1	Uncl.	g	0011	1	g	0051-53	2	
1218-2400				Uncl.	b	1707	3	g	0130-0132	2	
June 7											
0000-0004		← 0004	1-					g	1816	2	
0006-0145		0007-0139	1								
1220-2400		1220-1432	1								
		1503-1802	1-								
		2034	1-								
		2311	1-								
		2346-47	1								
June 8											
0000-0145		1603	1-	Uncl.		1455	1-	g	1232	2	
1218-2400		2345	1-					g	1452-53	3	
								g	1453-54	1-	
								g	1649-50	3	
								g	2041	2	
								b	2104	3	
								b	2131	2	
								g	2253-55	3	
June 9											
0000-0145		2102-03	1-					b	1311	3	
1220-2400		2301	1-					b	2135	1-	
		2349	1-								
June 10											
0000-0150		0046	1-					g	1224	1-	
1219-2400		1845	1-					b	1543	1-	
		2009-14	1								
		2151	1-								
		2356	2								
June 11											
0000-0148		2101-2114	1-					G	0135-38	1-	
1219-1538		2231-44	1-								
1551-2400											

*Burst unless specified otherwise.

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	Bursts* or Continuum	Time	Int	II or Unclass	Act	Time	Int	Act	Time	Int	
June 12											
0000-0150		1227	1-	Uncl.	g	1558	1	g	1220	3	
1218-1600		1523	1-	Uncl.		2204	1-	g	1225	1	
1800-2400								b	1327	1-	
								g	1333	2	
								b	1552	3	
								b	2027	2	
June 13											
0000-0147	Cont.	1449	2					g	1448-49	2	
1220-2400											
June 14											
0000-0150	Cont.	1520	3	Uncl.		0030	3	b	1422	2	
1219-2400				Uncl.	b	1709	1-	b	1431	2	
								g	1518	2	
				II		2120.5-25	3	g	1520	3	
								g	1522-23	3	
								b	1525	1-	
								b	1709	3	
								g	1741-42	2	
								g	1743-44	1	
								g	2117	1-	
								g	2121	2	
								b	2205	1-	
June 15											
0000-0150				Uncl.		2048	3	g	0012	3	
1219-2400								b	1226	2	
								b	1931	1-	
								b	2042	1-	
								g	2046-48	2	
June 16											
0000-0150								g	0026	3	
1219-2400								b	1258	1-	
								g	1300	2	
								b	1605	1-	
								g	1807-08	3	
June 17											
0000-0150		1549	1-					b	1248	1-	
1218-2400		1648	1-					b	1349	1-	
		1842	1-					b	1420	1	
		2329	1-					b	1943	3	
								g	2202-03	1-	
								b	2206	1-	
June 18											
0000-0150		1657	1-					b	0055	1	
1218-2400		2148	1-					g	1225	1	
								g	1341	2	
								b	1343	2	
								b	1719	1-	
								b	2005	3	
								b	2039	2	
June 19											
0000-0149	Cont.	0131	2					g	0130-31	1	1331 Inverted U
1218-2400		1307	1					g	1331	1	burst.
		1954	1								
June 20											
0000-0150		0050	1					b	1518	3	
1218-2400		1520	1-								
		2317	1-								
		2319	1-								
		2321-23	1-								
June 21											
0000-0130		2224-26	1	Uncl.		1841	1-	b	1805	1-	
1444-2400		2231	1					b	1809	1-	
		2249	1					g	2204-05	3	
	Cont.	2320-21	3					b	2321	1	
June 22											
0000-0150		1238-1301	1-					g	1221	1	
1219-2144								b	1543	1	
2145-2400								b	1555	2	
June 23											
0000-0149				Uncl.	b	0029	2				
1219-2400				Uncl.	g	0053	1				
June 24											
0000-0150		2154-2335	1-	Uncl.	b	0007	2				
1219-2400											

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	Bursts* or Continuum	Time	Int	II or Unclass	Act	Time	Int	Act	Time	Int	
June 25											
0000-0149		0003-04	1-								
1220-2400		0041-54	1-								
		0132-35	1-								
		1243-1446	1	Uncl.	g	2227	2	b	2133	1-	
		1446-1449	2								
		1449-1737	1								
		1737-1804	2								
		1804-2007	1								
		2007-2023	2								
		2023-28	3								
		2028-47	2								
	Cont.	2034	3								
		2047-2108	3								
		2108-23	2								
		2152-2204	1								
		2248-2334	1								
		2334 ⟶	2								
June 26											
0000-0150		⟵ 0143	2								
1219-2400		1221-49	1	Uncl.	b	1825	1	b	2020	1-	
		1357	1								
		1425-49	1-								
		1449-1506	2								
		1710	1-								
		1807	1-								
		1939-49	1-								
		2010 ⟶	1								
June 27											
0000-0150		⟵ 0146	1					b	0006	3	
1220-2400		1623-1719	1-					b	1818	3	
		2132	1-					g	2055	3	
		2202-2347	1-					g	2143	3	
June 28											
0000-0149		1755-1913	1	Uncl.		1703	1-	b	1659	1-	
1220-2325		1942-2020	1-					b	1744	1-	
2326-2400		2042-2313	1					g	1845-46	3	
		2313-2325	2								
		2326-41	2								
		2341-53	1								
		2353 ⟶	2								
June 29											
0000-0149		⟵ 0017	2					g	0029	3	
1219-2400		0017-0143	1					b	0133	1-	
	Cont.	2025	2					g	1510	3	
								g	1733	1	
								g	1750	1	
								g	1751-52	2	
								b	1754	2	
								b	1756	2	
								g	2016	2	2016 Inverted U burst.
								g	2024-25	3	
								g	2127	2	
								b	2129	2	
June 30											
0000-0150		0130-41	1					b	0014	1-	
1213-2400								g	1227	2	
								b	1237	1-	
								b	1436	1	
								b	1451	3	
								g	1654-55	1-	
								g	1732	1	
								b	2010	1	
								b	2054	3	

This replaces the June data from Fort Davis published in CRPL-F 167B, July, 1959. The changes in the data are due to extensive checking and re-analysis upon adoption of more stringent definitions by Fort Davis.

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Date and Observing Times (U.T.) 1958	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified				Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Act	Time	Int	Act	Time	Int	
Dec. 1											
1356-2340		1359-1409	1					g	1405	2	
		1409-1416	1-					b	1705	1-	
		1428-35	1-					g	2317	2	
		1435-1731	1								
		1731-1922	1-								
		1933-46	1-								
		2118-2156	1-								
		2156-2201	1								
		2201-2223	2								
		2223-54	1								
		2254-2333	2								
Dec. 2											
1358-2340		1358-1755	2					g	1534	1	
		1755-1947	1					g	1920	1-	
		2001-2127	1-					g	2023-25	2	
		2127-2223	1					g	2034	1-	
		2235-40	1					g	2054	1	
		2240-2311	1-					b	2120	2	
		2311-34	1					b	2204	1	
								g	2255	1-	
								G	2256-58	1-	
								b	2301	1-	
								g	2306	3	
								G	2307-08	2	
								b	2330	2	
								g	2331	1	
								g	2332-33	1	
Dec. 3											
1356-2340		1400-18	1					g	1458	1-	
		1426-30	1-					g	1759-1800	1-	
		1511-24	1-					g	2312-13	2	
		1559-1614	1-								
		1626-31	1-								
		1652-1724	1-								
		1749	1-								
		1801-26	1-								
		1826-52	1								
		1852-1943	2								
		1943-2029	1								
		2029-55	1-								
		2108-17	1-								
		2125-26	1-								
		2133-2211	1-								
		2227-54	1-								
		2304	1-								
		2313-30	1-								
Dec. 4											
1400-2340		1448-50	1					G	1447-48	2	
		1501-02	1-					b	1552	2	
		1832-33	1-					g	1622	1	
		1845-1904	1-					g	1624	3	
		1920	1-					g	1708	2	
		1930	1-					g	1709	2	
		1941-53	1-					b	1756	1-	
		1959	1-					g	1812-14	2	
		2015	1-					G	1817-20	2	
	Cont.	2031	2					g	2026	3	
		2040-2104	1-					g	2029	2	
		2118	1-					g	2030-31	3	
		2124	1					g	2031-33	1-	
		2202-03	1-					b	2043	1-	
		2301-12	1-					g	2134	2	
		2312-33	1					g	2137	2	
								g	2157	1	
								b	2245	1	
								b	2253	1	
								G	2256-57	2	
Dec. 5											
1402-2340		1402-28	1					g	1507-08	2	
		1428-1508	1-					b	2052	2	
		1508-22	1								
		1522-50	1-								
		1550-1901	1								
		1901-2026	1-								
		2026-36	1								
		2036-2219	1-								
		2219-2333	1								
Dec. 6											No observations.
Dec. 7											
1412-2340		1416-53	1-					g	1412-13	2	
		1453-1627	1					g	2307	1-	
		1627-2124	1-					g	2326	1-	
		2202-09	1-								

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Date and Observing Times (U.T.) 1958	Type I (Noise Storms and Continuum) Bursts* or Continuum	Time	Int	Type II (Slow Drift Bursts) Unclassified II or Unclass	Act	Time	Int	Type III (Fast Drift Bursts) Act	Time	Int	Remarks
Dec. 8											
1413-2340		1413-1550	2					b	1923	1	
		1550-1607	1					b	2317	1	
		1607-24	2								
		1624-1711	1								
		1711-1839	1-								
		1850-1921	1-								
		1921-2032	1								
		2032-2339	2								
Dec. 9											
1413-2340		1418-33	1-					G	1459-1502	2	
		1627-33	1-	II		1657.9-1709	3	g	1622-23	2	
		1649-50	1-					g	1656	1	
		1656	1					b	1823	1-	
		1756-1817	1-					g	1905	1	
		1823-24	1-					g	1908	2	
	Cont.	1858-1900	2					g	1915	2	
	Cont.	1900-1902	3					b	2035	1-	
	Cont.	1903-04	2					g	2037	1	
	Cont.	1908	2					g	2047-48	2	
		1910	1-					g	2049	1-	
		1917	1-					b	2054	1-	
		2047-48	1-					g	2106	1-	
		2259-2300	1-					g	2114	1-	
		2305	1-					g	2116	1-	
								g	2117-18	2	
Dec. 10											
1414-2340		1414-46	1					G	1415-17	2	**Bursts of continuum
	Cont.	1414-1742	1					g	1419-20	2	radiation, sometimes
		1446-58	2					b	1438	2	resolving into fast
	Cont.**	1451-53	3					g	1444	1	drift bursts, mainly
	Cont.**	1453-56	1					g	1445-46	1	in the frequency
	Cont.**	1456-57	2					b	1450	2	range 250-580 Mc/s.
		1458-1526	1					b	1455	3	
		1526-34	3					b	1527	3	
		1534-48	1					b	1600	3	
		1548-54	3					G	1724-25	3	
		1554-1634	2					g	1729-30	1-	
		1634-1707	1					b	1908	3+	
		1707-42	2					b	1910	1-	
	Cont.**	1728-29	2					g	1917	1	
		1742-1804	1					g	2040	2	
	Cont.**	1803-05	1					g	2047-48	1	
		1808	1					g	2051-52	1-	
		1823-1923	1					b	2104	1	
	Cont.**	1901-03	1					b	2106	1	
		1930-41	1-					g	2107-08	1	
		1956	1-					G	2112-14	2	
		2009-16	1-					b	2120	1	
		2030-2102	1-					g	2214	1-	
		2102-2123	1					g	2216	1-	
	Cont.**	2120-26	1					g	2222	2	
		2211	1-					g	2223-24	1	
		2216-26	1					b	2225	1	
		2231-49	1					g	2242	1-	
		2249-50	2					g	2247-48	1-	
		2250-2336	1					g	2248-50	1-	
								g	2336	1	
Dec. 11											
1415-2340		1415-1439	2					b	1420	2	**Bursts of continuum
	Cont.**	1427-30	3+					g	1421	1-	radiation, sometimes
	Cont.**	1430-39	2					G	1427-30	3+	resolving into fast
	Cont.	1439-49	2					b	1431	1	drift bursts, main-
		1439-51	1					g	1452-53	1-	ly in the frequency
		1451-1546	2					g	1457	2	range 250-580 Mc/s.
	Cont.**	1505-07	2					b	1458	1	
	Cont.**	1515-17	2					b	1502	3	
	Cont.**	1517-20	3+					g	1504-05	1-	
	Cont.**	1520-24	2					g	1510-12	2	
	Cont.**	1524-1613	3+					g	1515	2	
		1546-1625	1-					g	1518-20	2	
	Cont.	1613-22	2					G	1523-25	2	
	Cont.	1622-47	1					g	1540	3	
		1625-30	1					G	1541-43	2	
		1630-1702	1-					b	1544	3	
	Cont.**	1652-58	1					b	1553	2	
	Cont.**	1658-59	2					g	1554	3	
	Cont.**	1659-1700	1					g	1615-17	1-	
		1702-08	1					g	1619-20	2	
	Cont.**	1704-06	1					g	1725-26	2	
	Cont.**	1708-10	2					g	1727	3	
		1708-18	2					G	1806-07	2	

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Date and Observing Times (U.T.) 1958	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified				Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Act	Time	Int	Act	Time	Int	
Dec. 11 (Cont.)	Cont.	1713-20	1					g	1810	3	
		1718-1835	1					b	1838	1	
	Cont.**	1722-25	2					g	1842	1	
	Cont.**	1730-31	2					G	1855-57	2	
	Cont.**	1738	2					g	1858	1	
	Cont.**	1746-58	2					b	1909	3	
	Cont.**	1758-1800	3					C	1935-40	2	
	Cont.**	1800-02	1					g	1942-43	2	
	Cont.**	1803-05	3	Uncl.		1811.9-19	3	C	1944-45	2	1811.9-19. This Uncl.
	Cont.**	1805-42	3+					g	2000-01	1-	burst has many fea-
		1835-1914	2					b	2138	1-	tures of a II burst.
	Cont.**	1842-52	2					b	2203	3	
	Cont.**	1852-1915	3					g	2212	2	
		1914-47	1					g	2214-15	3	
	Cont.**	1915-31	2					g	2322-23	3	
	Cont.**	1934-37	3+					g	2324	3	
	Cont.**	1937-40	3					g	2328	2	
	Cont.**	1945-48	1								
		1947-56	1-								
		2026-52	1-								
		2106-12	1-								
		2112-2316	1								
	Cont.**	2214-15	1								
	Cont.	2241-57	2								
	Cont.	2303-07	1								
		2316-29	2								
	Cont.**	2312-17	3								
	Cont.**	2321-35	1								
Dec. 12 1415-2340		1415-1836	1					g	1422	2	**Bursts of continuum
	Cont.IV	1415-1652	3					g	1441-42	2	radiation, sometimes
	Cont.IV	1652-1705	2					g	1453	3	resolving into fast
	Cont.IV	1705-14	1					C	1459-1501	1	drift bursts, mainly
	Cont.**	1722-31	1					g	1502-03	1	in the frequency
	Cont.**	1733-34	2					C	1504-09	3	range 250-580 Mc/s.
	Cont.**	1734-37	1					b	1543	2	
	Cont.**	1744-52	3					b	1549	3	
	Cont.**	1756-57	3					g	1558	1	
	Cont.**	1758-59	1					g	1607	2	
	Cont.**	1811-12	1					g	1652	3	
	Cont.**	1815-18	3					G	1744-46	3	
	Cont.**	1835-38	2					b	1752	2	
		1836-1908	1-					g	1817	3	
	Cont.**	1814-42	3					g	1847-48	1	
	Cont.**	1851-54	3					g	1855	2	
	Cont.**	1854-58	1					b	1933	1	
	Cont.**	1900-01	1					g	1959-2000	3	
	Cont.**	1911-12	1					g	2032	1	
	Cont.**	1914	1					b	2112	1	
	Cont.**	1919	1					g	2118	1	
		1921-22	1					b	2126	3	
	Cont.**	1922-28	2					g	2154	1-	
		1931-35	1-					C	2157-58	3	
	Cont.**	1932-33	1					g	2159	3	
	Cont.**	1938-47	2					C	2200-02	1	
		1944	1-					b	2205	2	
	Cont.**	1950-53	1					b	2206	1-	
	Cont.**	1953-54	3					g	2217	3	
	Cont.**	1954-56	2					b	2225	1	
	Cont.**	1958-2000	2					b	2313	1	
		2005	1-					g	2319	2	
	Cont.**	2005-07	2								
	Cont.**	2008	1								
	Cont.**	2012-23	1								
	Cont.**	2031-35	2								
	Cont.**	2057-2101	2								
		2104	1-								
	Cont.	2117-23	2								
		2122-23	1-								
	Cont.	2123-37	1								
	Cont.	2158	3								
	Cont.**	2206-10	2								
		2207	1-								
		2208-09	1-								
	Cont.	2218-24	1								
		2244-45	1-	Uncl.		2255	3				
	Cont.**	2307-08	1								
	Cont.**	2316-20	2								
Dec. 13 1414-2340		1417-24	1					g	1420	2	
		1603	1					g	1442	1	
		1921-22	1					b	1500	1	
		2028-38	1-					g	1628	2	
		2049	1-					g	1637	3	
		2103	1					g	1745-46	1	
		2146-2221	1-					g	1749	3	
	Cont.	2215	3					g	1833-34	2	
		2250-2337						g	1847	3+	
								b	1924	1	

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

DECEMBER 1958

Fort Davis 100-580 Mc.

Date and Observing Times (U.T.) 1958	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified				Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Act	Time	Int		Time	Int	
Dec. 13 (Cont.)								b	1930	2	
								g	1939	1	
								g	1940-41	2	
								g	2054-55	1	
								b	2058	1	
								g	2130-31	2	
								G	2150-51	2	
								g	2215-16	3	
Dec. 14 1415-2340		1415-23	1-					g	1531-33	2	
		1438-1916	1					g	1806-07	3	
		1930-2024	1					g	1819	2	
		2043-2118	1-					g	1942-43	2	
		2129	1					g	2238-39	2	
		2138-2209	1-								
		2224-28	1-								
		2251-56	1-								
		2306-33	1-								
Dec. 15 1415-2340		1537-38	1-					b	1447	1	**Bursts of continuum radiation, sometimes resolving into fast drift bursts, mainly in the frequency range 250-580 Mc/s.
		1538-39	2					g	1454	1	
	Cont.**	1543-45	1					g	1534	2	
	Cont.**	1545-47	3					g	1628	2	
	Cont.**	1547-49	2					g	1903	1-	
	Cont.**	1549-54	1					g	1909	1	
		1647-48	1-					g	1913-14	1	
		1851	1-					g	2018	1	
		2113	1-					b	2054	2	
		2145-51	1-					b	2102	1	
		2208-10	1-					b	2112	1	
		2226-28	1-					G	2127-29	1	
		2323	1					b	2130	1	
								g	2137	1-	
								g	2155	2	
								b	2303	1	
								b	2322	1	
								g	2324-25	1	
Dec. 16 1415-2340	Cont.**	1543-44	3					g	1449	1	**Bursts of 3 continuum 1 radiation, sometimes resolving into fast drift bursts, mainly in the frequency range 250-580 Mc/s.
	Cont.**	1547-48	3					b	1549	3	
		1548-49	1-					g	1629	1	
		1550	1-					g	1630-31	3+	
		1624-25	1-					g	1631-32	3	
		1718-19	1-					b	1634	1-	
		1920	1-					G	1636-39	2	
	Cont.**	2134-35	1-					b	1640	1	
								g	1717-18	1-	
								g	1930	1	
								G	2132-33	2	
Dec. 17 1415-2340		2106	1	Uncl.		1859-1900	3+	b	1508	3	
		2309	1-	II		1900.5-07	2	b	1603	2	
								G	1858-1900	2	
								g	2006-07	1	
								g	2334	2	
Dec. 18 1414-2340	Cont.	1639-41	1					b	1619	2	
								g	1639	2	
								g	1832	1	
								g	1836	1	
Dec. 19 1414-2340		1903	1-					b	1844	1-	
		2206	1-					g	1904-05	1-	
		2256-2315	1-					g	1907-08	1	
		2320-22	3					b	2207	2	
		2322-33	1					G	2320-22	2	
								g	2322-23	1	
								G	2323-28	2	
								G	2328-32	1	
Dec. 20 1415-2340		1922-23	1					g	1436-37	1	
		2150	1					g	1544-45	1	
		2328-29	1-					g	1545-46	1	
								g	1547	1	
								b	1706	1	
								g	1955	2	
								b	2019	1	
								b	2039	1	
								g	2332	2	

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

DECEMBER 1958

Fort Davis

100-580 Mc.

Date and Observing Times (U.T.) 1958	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified				Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Act	Time	Int	Act	Time	Int	
Dec. 21											
1414-2340		1721	1-					g	1503	1	
		2103-04	1					g	1536	2	
								g	1557	1	
								b	1700	1-	
								g	1711	1	
								g	1907	2	
								g	2139	2	
Dec. 22											
1607-2340		1802	1					g	1714	2	
		2021	1					g	1803-04	3	
		2246	2					g	1811	2	
								b	1927	2	
								b	1928	3	
								b	1931	1	
								g	2015	2	
								g	2041	1-	
								g	2327	2	
Dec. 23											
1414-2340	Cont.	1823-34	3					g	1833	3	
		1915	1-					g	1956	1	
		2159-2207	1					g	2047-48	1	
								b	2158	2	
								b	2205	2	
Dec. 24											
1416-2340		1416-35	1					g	1432	1	
		1448-54	1					b	1437	1	
		1506	1-					g	1438	2	1617 Inverted U
		1516-17	1-					g	1617	2	burst.
		1540-1609	1-					g	1705	1	
	Cont.	1617	3					b	1737	1	
		1709	1-					g	1739	1-	1751 Inverted U
		1955-56	1-					g	1751	2	burst.
	Cont.	2139-41	1					b	1844	1	
	Cont.	2158-2210	1					g	1858	1	
								b	1906	1	
								g	1938	1	
								g	1939-40	2	
								g	1957	2	
								g	2003-04	1	
								b	2009	2	
								g	2024	2	
								b	2025	1-	
								b	2026	1	
								g	2035	1	
								b	2039	3	
								g	2041	2	
								b	2312	2	
								g	2323	2	
Dec. 25											
1414-1444		1645	1-					g	1417	1	
1555-2345		1823	1-					g	1418	1	
		2233	1-					g	1640	2	
								b	1727	2	
								b	1828	3	
								g	1829-30	2	
								g	1832	2	
								g	1905	1	
								b	1910	3	
								b	1953	1-	
								b	1959	1-	
								b	2002	1	
								g	2030	3	
								b	2037	1-	
								b	2202	1	
								g	2211	3	
								g	2220	3	
								g	2222-23	2	
Dec. 26											
1414-2345		1625-27	1-					g	1624	1	
		1846	1-					g	1848	2	
		1851	1					b	1951	2	
								g	2015	1	
Dec. 27											
1414-2345		1756	1-					g	1415	1	
		2209	1-					g	1423	1	
								g	1433	2	
								g	1439-40	1	
								g	1455	1	
								g	1727-28	1	
								g	1744	2	
								g	2148	1	
								g	2227	1	

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

DECEMBER 1958

Fort Davis — 100-580 Mc.

Date and Observing Times (U.T.) 1958	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified				Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Act	Time	Int	Act	Time	Int	
Dec. 28											
1416-2345		1542-47	1-					g	1426	3	
		1616-52	1-					b	1431	3	
		1652-56	1					G	1506-10	2	
		1656-1846	2					g	1604-05	1-	
		1846-1940	1					G	1624-25	2	
		1940-50	2					b	1654	2	
		1950-2043	1					b	1716	2	
	Cont.	2001	2					g	1726	2	
		2043-2137	2					b	1734	2	
		2137-2203						g	1752	1-	
		2203-2250	2					g	1809	1-	
		2250-2340	1					g	1841	1	
								g	1845	1	
								b	1846	1-	
								G	1854-57	2	
								G	2000-01	2	
								g	2002	2	
								g	2046-47	1-	
								b	2202	1-	
								b	2248	1-	
								g	2342-43	2	
Dec. 29											
1415-2345		1513-14	2					G	1726-27	2	
		1730-32	1					g	2027	1	
		2137-38	1					g	2028-29	1-	
		2221	1-					g	2100	2	
								b	2137	3	
								g	2203-04	1	
								g	2250	1	
								b	2328	1	
Dec. 30											
1415-2345		1420-24	1					g	2107-08	1-	
		1852	1-								
Dec. 31											
1415-2345		1429	1-					G	1659-1701	2	
		1443-44	1-	II		1704.7-11	3	G	1703-05	2	
		1453-54	1-					g	1707-08	2	
		1509	1					b	1709	1	
		1534-40	1-					g	1713	1-	
		1658-1714	1					G	1717-18	1	
	Cont.	1700-02	3					g	1959	1	
	Cont.	1702-03	2					G	2305-06	1	
	Cont.	1703-04	1					g	2309	2	
	Cont.	1707-09	2								
	Cont.	1709-11	1								
		1952	1-								
		2003-07	1-								
		2052-54	1-								
		2138-2217	1-								
		2217-28	1								
		2228-2321	1-								

GEOMAGNETIC ACTIVITY INDICES

DECEMBER 1958

Dec. 1958	C	Values Kp Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	0.1	0o 0o 0o 1-	1o 1+ 1o 0+	4+	2	Five
2	1.3	2- 1+ 2- 4-	4+ 4o 4o 5+	26o	23	Quiet
3	0.4	3+ 3o 1+ 1+	1- 1o 1o 1-	12+	7	
4	1.8	4- 3o 4o 5+	6- 5+ 7- 6o	40-	54	1
5	1.3	7o 4+ 3+ 3-	2o 2o 1+ 2o	25-	28	7
						10
6	0.8	3o 1+ 1+ 4-	4- 3o 1+ 3-	19o	12	12
7	0.2	2- 3- 2+ 1+	1+ 1o 1- 1-	12-	6	25
8	0.8	0+ 0o 0+ 2o	2+ 3o 4o 3+	15+	10	
9	0.7	4- 3o 4o 3-	2- 2o 1- 1-	18+	12	
10	0.0	1o 2o 2+ 1-	0+ 1- 0o 0+	7+	4	
11	0.5	1+ 2o 2o 3-	2o 1+ 1+ 3+	16o	8	Five
12	0.3	2o 2o 0o 1+	1+ 1o 2o 2+	12o	6	Disturbed
13	1.6	5+ 5+ 3+ 3o	6- 5o 6o 5+	39o	50	
14	1.2	4- 3o 2- 2o	4o 3+ 4o 4o	26-	19	4
15	0.7	2o 2o 1o 3-	2o 3- 3+ 3-	18+	10	5
						13
16	1.0	4o 4+ 2+ 4-	3+ 2+ 2o 1o	23o	16	17
17	1.4	2- 1o 2- 2+	2- 4+ 6+ 6o	25o	30	18
18	1.3	7o 6- 3+ 3-	3+ 1+ 1o 3-	27-	33	
19	1.1	4+ 5- 3+ 4o	4- 3o 3- 2-	27+	21	
20	0.8	3- 3+ 3+ 3+	3o 3o 3- 2+	24-	15	
21	0.4	2+ 2o 3- 2o	2+ 2- 2o 1+	16+	8	Ten
22	0.6	3o 1o 2o 2-	2+ 2o 3o 2+	17+	9	Quiet
23	0.8	1+ 1o 3- 3o	3+ 3+ 3o 2+	20o	12	
24	0.2	2+ 2o 2+ 2o	21 1+ 1+ 2-	15o	7	1
25	0.2	0o 0o 0+ 2-	1+ 1+ 2- 3-	9o	4	3
						7
26	0.9	2+ 2+ 1o 2o	3+ 3+ 3+ 3+	21o	13	10
27	0.7	2+ 3o 3o 3o	3+ 3- 1+ 2o	21-	12	11
28	0.8	3+ 3- 3o 3-	3o 3o 3- 2+	23-	14	12
29	0.4	3o 2o 2- 2-	3- 2- 2+ 3o	18o	10	21
30	0.7	3- 2- 2+ 2+	4- 3o 3- 3-	21o	12	24
31	0.2	2+ 1+ 2o 1+	3- 2- 2+ 1-	14+	7	25
						31
Mean:	0.75			Mean:	15	

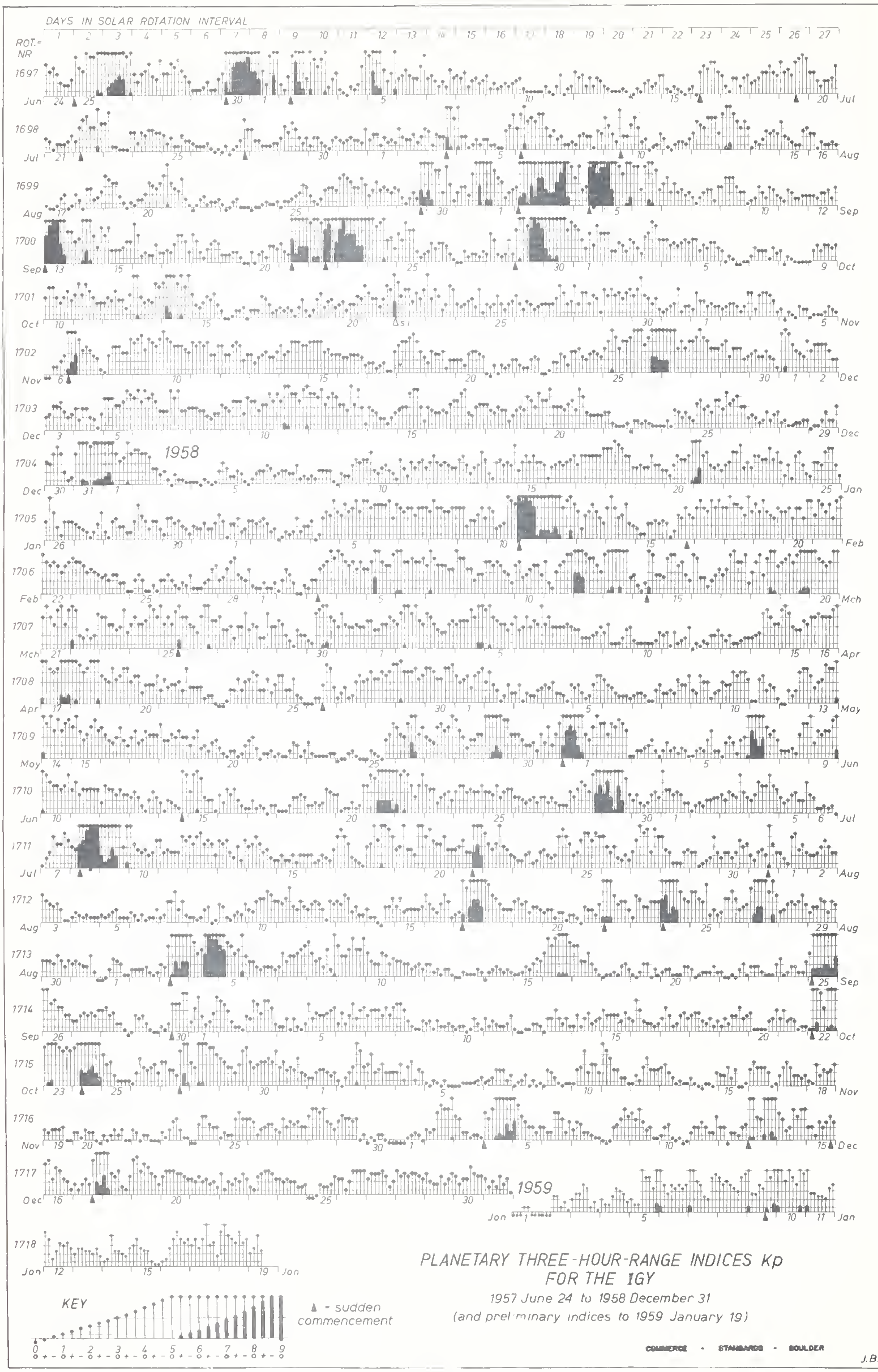
Note by J. Bartels, Chairman, IAGA Committee on Characterization of Magnetic Activity

The December 1958 table concludes the series of the Kp-indices for the International Geophysical Year. It is a pleasure to express thanks to the collaborating observatories for their carefully derived data, namely: Sitka, Fredericksburg (US Coast and Geodetic Survey); Meanook, Agincourt (Dominion Observatory, Ottawa, Canada); Lerwick, Eskdalemuir (Meteorological Office, Edinburgh); Hartland (Royal Greenwich Observatory); Lovö (K.Sjöfartstyrelsen, Stockholm); Rude Skov (Meteorologisch Institut, Charlottenlund, Denmark); Witteveen (K. Meteorologisch Institut, De Bilt, Holland); Wingst (Deutsches Hydrographisches Institut, Hamburg); Amberley (Magnetic Survey, Geophysics Division, Christchurch, New Zealand). These data have been promptly supplied, mostly by air-mail, so that final Kp-indices and musical diagrams could be edited about three weeks after the close of each calendar month. Unless delays in the transmittal were unusually long, tables were also issued for the first half of each month. This will be continued after the IGY.

On the following two pages are the 27-day (musical) diagram of three-hourly Kp-indices for the IGY, and two corresponding diagrams for daily characters C9. In the righthand diagram for C9, the daily characters shown have been smoothed over three days, since it had been found formerly that the 27-day recurrences appear more clearly in running three-day means. For the IGY, the impression of the original, unsmoothed data is, however, nearly as clear.

For explanations of Kp, Ap and Cp, please see IGY Annals Vol.4, 215-236, London 1957. For diagrams on Kp and C9 for previous years (Kp 1950-1958, Cp 1937-1958), see Beiträge zum IGJ (Abhandl. Akad. Wiss. Gottingen, Math.- Phys. Klasse) Heft 3, 1958; a copy of that paper, with text in German and English, may be had from the undersigned.

This work is done under the auspices of the International Association of Geomagnetism and Aeronomy, through its Committee on Characterization of Magnetic Activity, and the Permanent Service of Geomagnetic Indices (in the Federation of Permanent Astronomical and Geophysical Services), Director: J. Veldkamp, De Bilt (see Int. Union of Geodesy and Geophysics, Chronicle No. 15, Paris 1958, p. 253-258).



PLANETARY THREE-HOUR-RANGE INDICES Kp FOR THE IGY

1957 June 24 to 1958 December 31
(and preliminary indices to 1959 January 19)

R	Rot.-No.	1st day	C9	
999 998 799	1697	J 24	477 451 977 637 422 111 201 142 363	163 310
998 888 778	98	J 21	163 310 213 121 263 362 242 156 221	023 350
987 999 899	99	A 17	023 350 001 253 666 688 986 314 212	964 333
999 999 999	1700	S 13	964 333 117 896 520 287 535 330 102	554 673
999 999 999	01	O 10	554 673 021 236 552 223 454 222 300	565 665
999 999 999	02	N 6	565 665 435 531 623 012 367 764 364	326 653
998 899 999	03	D 3	326 653 557 652 545 355 410 145 111	577 500
999 999 998	04	D 30	577 500 121 132 344 444 563 565 535	422 422
878 888 888	19	J 26	422 422 221 466 665 597 552 466 666	652 112
887 999 888	58	F 22	652 112 411 566 665 555 775 546 676	655 666
899 999 987		M 21	655 666 443 655 656 654 221 211 566	776 441
899 999 988	1708	A 17	776 441 243 336 665 312 321 335 246	664 453
778 989 999	09	M 14	664 453 111 002 665 737 761 124 746	654 245
987 799 999	1710	J 10	654 245 311 227 645 422 782 414 531	497 445
998 899 999	11	J 7	497 445 441 146 657 515 536 323 443	311 131
999 998 899	12	A 3	311 131 244 331 237 531 164 754 733	211 178
999 999 988	13	A 30	211 178 714 563 110 017 400 100 117	622 154
999 877 899	14	S 26	622 154 351 334 310 010 122 222 117	773 366
989 986 665	15	O 23	773 366 553 143 200 100 342 101 222	100 012
689 999 999	16	N 19	100 012 322 530 527 631 330 213 753	466 542
768 98	1717	D 16	466 542 231 133 423 2	

1st day	C9	
J 24	466 635 977 665 532 111 111 223 443	334 221
J 21	334 221 122 212 344 443 332 344 321	123 432
A 17	123 432 001 334 566 778 976 432 224	965 332
S 13	965 332 246 896 421 467 544 421 012	445 664
O 10	445 664 212 244 543 223 444 322 212	456 665
N 6	456 665 444 433 342 112 467 764 445	345 654
D 3	345 654 466 654 454 444 321 233 212	566 421
D 30	566 421 111 223 344 444 555 555 444	432 332
J 26	432 332 223 466 655 697 644 456 666	643 113
F 22	643 113 323 466 665 556 766 555 666	665 665
M 21	665 665 544 555 566 654 322 112 466	766 532
A 17	766 532 233 345 665 322 222 233 446	665 443
M 14	665 443 211 013 566 566 753 125 665	654 344
J 10	654 344 321 246 654 434 665 333 433	597 644
J 7	597 644 432 245 666 544 454 433 443	211 222
A 3	211 222 234 322 256 632 346 666 553	211 367
A 30	211 367 653 553 210 134 410 000 145	632 334
S 26	632 334 433 233 211 011 222 222 235	765 456
O 23	765 456 543 333 210 111 333 111 222	100 112
N 19	100 112 223 331 225 563 222 213 454	466 543
D 16	466 543 222 223 332	

IGY: Daily indices C9 (scale 0 to 9)
arranged in solar rotations
R is relative sunspot number.

Symbol	.	,	2	3	4	5	6	7	8	9
R =	0	1 ... 15	16 ... 30	31 ... 45	46 ... 60	61 ... 80	81 ... 100	101 ... 130	131 ... 170	171 ...
C9 =	0	1	2	3	4	5	6	7	8	9
Cp =	0.0 0.1	0.2 0.3	0.4 0.5	0.6 0.7	0.8 0.9	1.0 1.1	1.2 ... 1.4	1.5 ... 1.8	1.9	2.0 ... 2.5

IGY: Smoothed daily indices C9
(running three day means)
to exhibit 27-day-recurrence tendencies

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

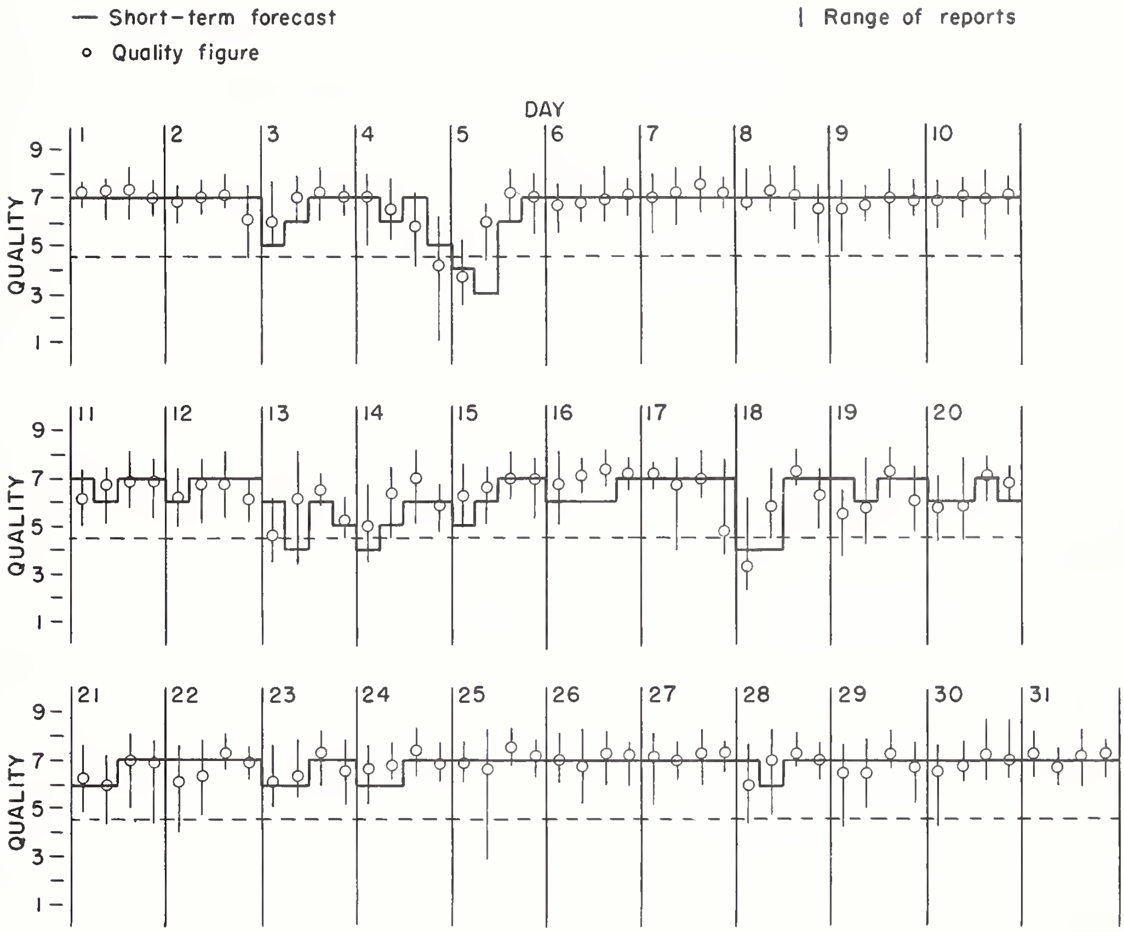
DECEMBER 1958

Dec. 1958	North Atlantic 6-hourly quality figures: 00 to 06	06 to 12	12 to 18	18 to 24	Short-term forecasts issued about one hour in advance of: 00	06	12	18	Whole day index	Advance forecasts (J-reports) for whole day; issued in advance by: 1-7 days Final	1-7 days Js	1-7 days SDW	1-7 days J	Geomagnetic K_{Fr} Half (1)	Day (2)
1	7o	7+	7+	7o	7	7	7	7	7+	7			7	0	1
2	7o	7o	7o	6+	7	7	7	7	7-	7			7	2	3
3	6o	7o	7+	7o	5	6	7	7	7-	7			7	2	1
4	7o	7-	6o	4o	7	6	7	5	6-	7			7	(4)	(4)
5	4-	6o	7+	7o	4	3	6	7	6-	7			7	3	2
6	7-	7-	7o	7o	7	7	7	7	7o	7			7	2	2
7	7o	7+	8-	7+	7	7	7	7	7+	7			7	2	1
8	7+	7+	7o	7-	7	7	7	7	7o	7			7	0	3
9	7-	7-	7o	7o	7	7	7	7	7-	6			6	3	2
10	7-	7o	7o	7o	7	7	7	7	7o	6			6	1	0
11	6o	7-	7o	7o	7	6	7	7	7-	6			6	2	2
12	6+	7-	7-	6o	6	7	7	7	7-	5			5	2	2
13	5-	6+	7-	5+	6	4	6	5	6-	4		4	5	3	(5)
14	5o	6+	7o	6o	4	5	6	6	6o	3		3	6	2	3
15	6+	7-	7o	7o	5	6	7	7	7-	5		5	7	2	3
16	7-	7o	7+	7+	6	6	6	7	7o	7	7		7	3	2
17	7+	7-	7o	5-	7	7	7	7	6+	7	7		7	2	(4)
18	3+	6-	7+	6+	4	4	7	7	5+	5			5	(4)	2
19	6-	6-	7+	6o	7	6	7	7	6o	7			7	(4)	2
20	6-	6-	7o	7-	6	6	7	6	6+	7			7	3	3
21	6+	6o	7o	7-	6	6	7	7	7-	7			7	2	2
22	6o	6+	7+	7o	7	7	7	7	7-	7			7	2	3
23	6o	6+	7+	7-	6	6	7	7	7-	7			7	2	3
24	7-	7-	7+	7o	6	6	7	7	7o	7			7	2	2
25	7o	7-	8-	7o	7	7	7	7	7o	7			7	1	1
26	7o	7-	7+	7+	7	7	7	7	7o	7			7	2	3
27	7o	7o	7+	7+	7	7	7	7	7o	7			7	3	2
28	6o	7o	7+	7o	7	6	7	7	7-	7			7	2	3
29	6+	6+	7+	7-	7	7	7	7	7-	6			6	2	2
30	7-	7-	7o	7o	7	7	7	7	7-	6			6	3	3
31	7+	7-	7o	7+	7	7	7	7	7o	6			6	1	2

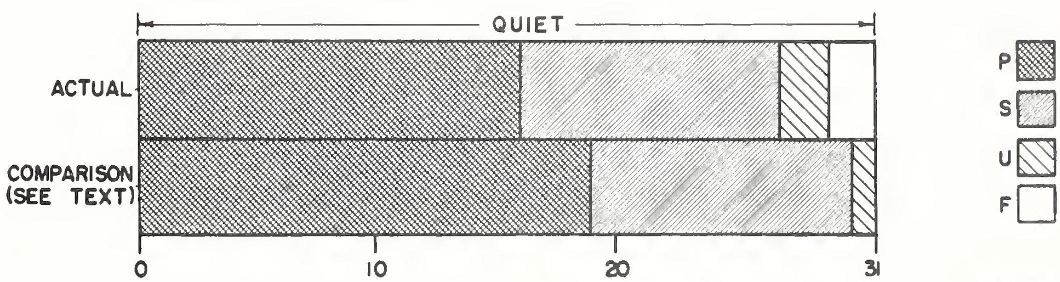
Score:		00	06	12	18	Final	J
Quiet Periods	P	18	18	24	24	16	18
	S	11	10	7	5	11	12
	U	0	0	0	1	2	1
	F	0	3	0	0	2	0
Disturbed Periods	P	1	0	0	0	0	0
	S	1	0	0	1	0	0
	U	0	0	0	0	0	0
	F	0	0	0	0	0	0

( ) represent disturbed values.

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS
NORTH ATLANTIC
DECEMBER 1958

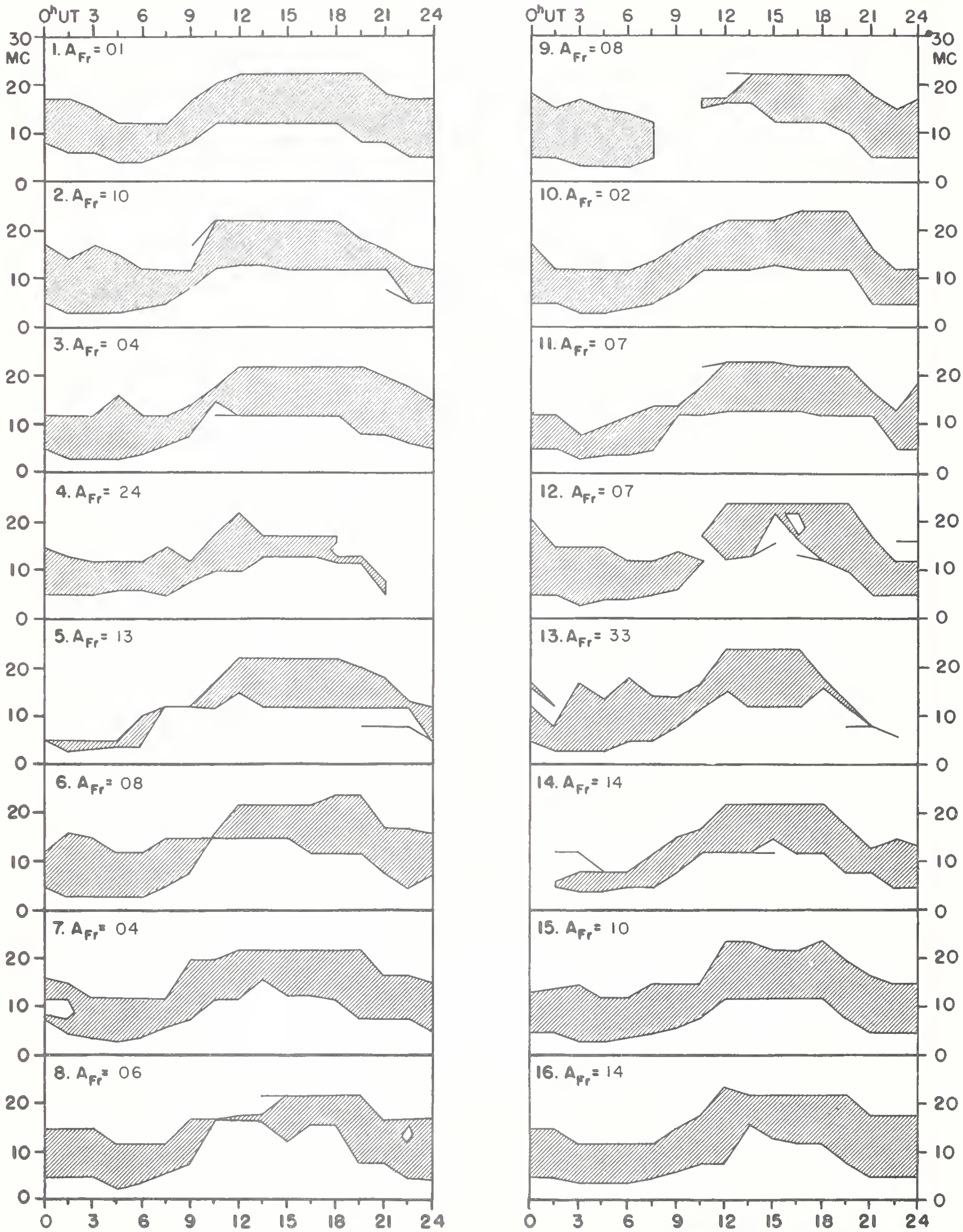


OUTCOME OF ADVANCED FORECASTS   FINAL ESTIMATE

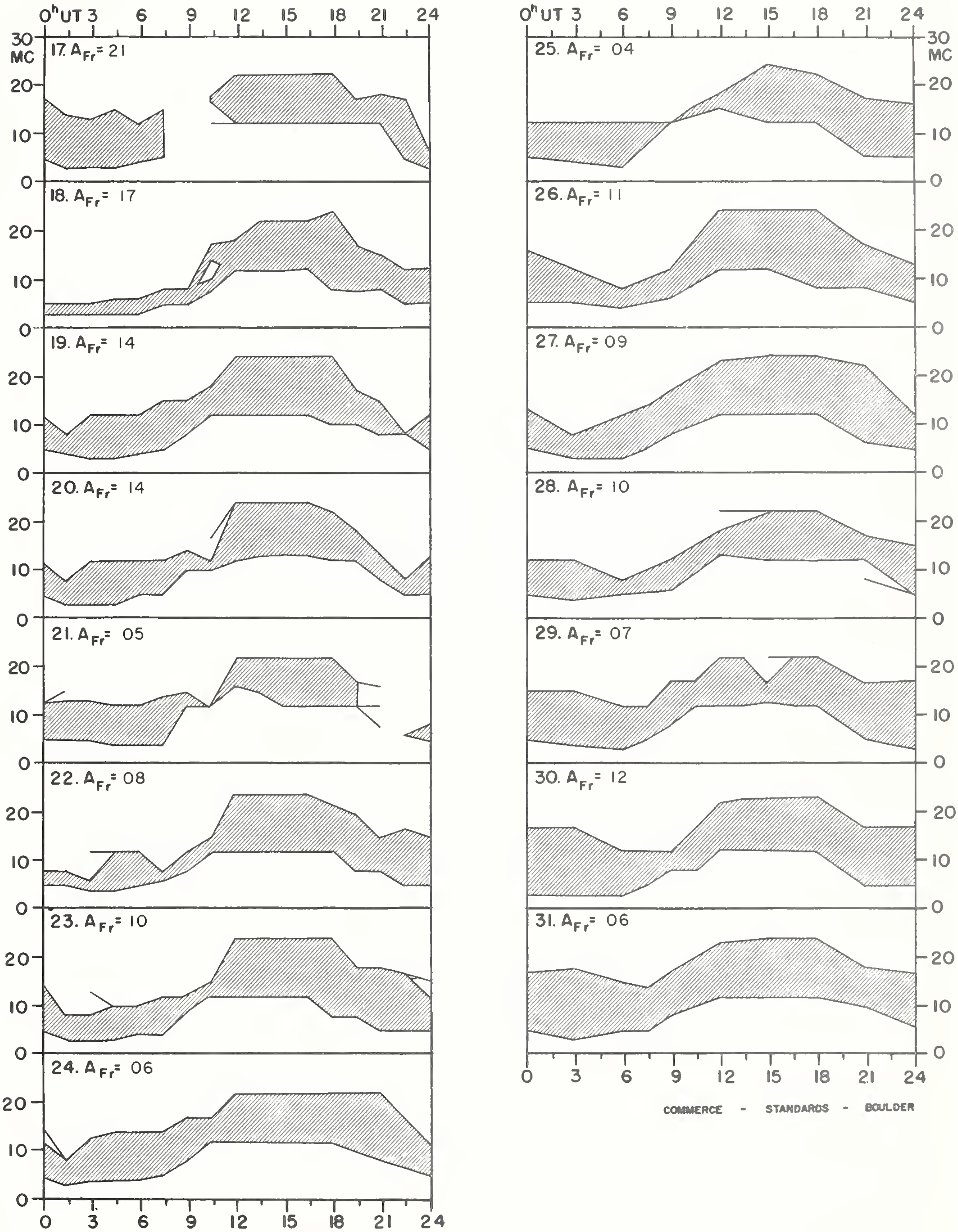


USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

DECEMBER 1958



DECEMBER 1958



COMMERCE - STANDARDS - BOULDER

Adapted from Observations by Deutsches Bundespost

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

DECEMBER 1958

Dec. 1958	North Pacific 8-hourly quality figures			Short-term forecasts issued at			Whole day index	Advance forecasts (Jp reports) for whole day; issued in advance by:				Geomagnetic K_{Si}	
	03 to 11	11 to 19	19 to 03	02	10	18		1-7 days Final	1-7 days Jps	1-7 days SDW	1-7 days Jp	Half Day (1)	Half Day (2)
1	6	5	6	6	5	7	6	6			6	0	1
2	6	5	5	6	6	6	6	6			6	2	(4)
3	6	3	6	6	5	6	5	6			6	1	1
4	5	3	3	5	3	5	(3)	5			5	(5)	(7)
5	4	6	7	5	5	7	5	6			6	(4)	2
6	6	5	6	7	6	7	6	6			6	3	3
7	6	5	6	7	6	7	6	6			6	1	1
8	6	5	7	6	5	8	7	6			6	1	3
9	6	6	7	7	5	7	7	6			6	3	2
10	6	5	7	6	5	6	6	6			6	1	0
11	6	6	7	6	5	7	7	6			6	2	1
12	6	5	6	7	6	7	6	3			3	1	1
13	5	4	5	6	5	5	5	4			4	3	(5)
14	5	5	6	6	6	6	5	6			6	2	(4)
15	6	5	5	6	5	6	5	6			6	1	2
16	6	7	6	7	5	7	6	6			6	3	3
17	6	6	6	7	5	5	6	6			6	2	(4)
18	5	7	6	5	6	7	6	5			5	3	2
19	6	6	6	6	5	7	6	6			6	(4)	3
20	6	6	6	7	5	6	6	6			6	3	3
21	6	5	6	6	6	7	6	6			6	2	2
22	6	5	6	7	5	6	6	6			6	1	3
23	5	6	6	6	5	6	6	6			6	2	3
24	6	6	6	6	6	6	6	6			6	2	2
25	5	5	6	6	5	6	5	6			6	1	2
26	4	6	6	7	6	6	6	6			6	1	3
27	6	7	7	6	6	6	7	6			6	3	3
28	5	5	6	6	6	6	6	6			6	2	3
29	5	5	6	6	6	6	6	6			6	1	2
30	6	6	6	6	6	6	6	6			6	2	3
31	6	5	6	6	5	6	6	6			6	1	1
Score: Quiet Periods P				15	10	16		18			18		
S				14	17	14		11			11		
U				0	1	0		0			0		
F				1	0	0		1			1		
Disturbed Periods P				0	1	0		0			0		
S				1	1	0		0			0		
U				0	1	1		1			1		
F				0	0	0		0			0		

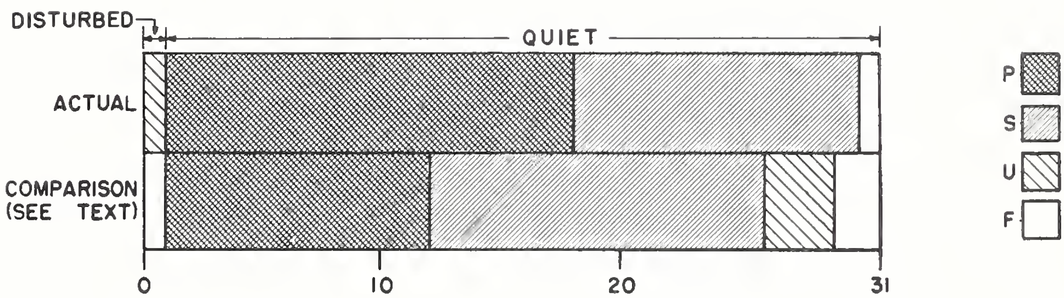
( ) represent disturbed values.

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

DECEMBER 1958

OUTCOME OF ADVANCED FORECASTS FINAL ESTIMATE



ALERT PERIODS AND SPECIAL WORLD INTERVALS

Alert Issued Ends 1600 UT 1600 UT	SWI Starts Ends 0000 UT 2359 UT	A_{Be} On Days of Alert Period (SWI Underlined)	Number of Flares of IMP 2 Reported Promptly on Days of Alert Period
1959			
Jan 1 Jan 3		03-04-04	0-0-0
Jan 10 Jan 14		18-11-09-07-03	0-0-0-0-0
Jan 22 Jan 29	Jan 24 Jan 25	08-07-<u>05</u>-<u>11</u>-11-10-09-10	2-0-0-5-1-2-0-1

COMMERCE - STANDARDS - BOULDER